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PRICE AND PRODUCTION POLICIES OF CALIFORNIA BROILER CHICK HATCHERIES

Kenneth D. Naden and George A. Jackson, Jr.

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This publication reports on one aspect of a study of the behavior of commercial broiler prices. During the past ten years average prices received in California for broilers have been sufficient to encourage a great expansion of production. However, during this period erratic fluctuations in price have indicated an unsatisfactory adjustment of production to demand. Chick hatcheries are one of the important agencies in the broiler industry. This study shows the extent to which hatcheries are involved in basic production decisions. Other studies will show the role of financing agencies, processors, and producers in affecting basic production decisions.

This study was made through a cooperative agreement between the Giannini Foundation of Agricultural Economics, University of California, and the former Bureau of Agricultural Economics, United States Department of Agriculture. The Foundation, in cooperation with other states in the Western Regional Poultry Marketing Committee, assumed primary responsibility for planning and conducting the study; the Bureau cooperated in the analysis of the data and in furnishing funds for personnel and travel expenses. The Foundation is primarily responsible for the conclusions reached in the study.

The appreciation of the authors for the cooperation of hatchery owners and managers in California is hereby expressed. Many other agencies, such as the Agricultural Extension Service, other departments of the University, and individuals in the poultry industry, contributed essential information and aid. The study on which this report is based was financed in part with funds appropriated under the Agricultural Research and Marketing Act of 1946.

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INTRODUCTION

The commercial broiler industry in California has expanded rapidly in recent years, and may expand further before economic forces limit its growth. This growth of broiler production in California has occurred at about the same rate as in other comparable areas and in the United States as a whole (fig. 1).

Spectacular growth in any industry of the order of that shown in figure 1 brings problems with it. One problem which has been most noticeable and troublesome is that of erratic price fluctuations. These fluctuations have a disturbing effect on all parts of the industry--production, processing, retailing.[3/] They are indicative of a poor adjustment of production to consumption or of weaknesses in the marketing system.

The price fluctuations which have caused the most complaints among marketing agencies and producers have been those which were not of the seasonal or predictable type. They were irregular in timing and were nearly always accompanied by the appearance of a glut or a famine of supplies. From this the assumption was drawn that changes in output or supplies were erratic and were responsible for the price changes.

Examination of the broiler industry shows that its output is not controlled by producers or by any one agency. The industry is made up of a group of specialized agencies, all of which have some influence on output--both long-run trends and short-run changes. These agencies are the

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1/ Assistant Professor of Agricultural Economics and Assistant Agricultural Economist in the Experiment Station and on the Giannini Foundation, Los Angeles.

2/ Formerly Assistant Specialist in Agricultural Economics in the Experiment Station, and Cooperative Agent, Bureau of Agricultural Economics, United States Department of Agriculture, Los Angeles.

3/ Naden, Kenneth D. Poultry Pricing in the Los Angeles Area. University of California Agricultural Experiment Station, Giannini Foundation Mimeographed Report No. 101: 1-33. December 1949.

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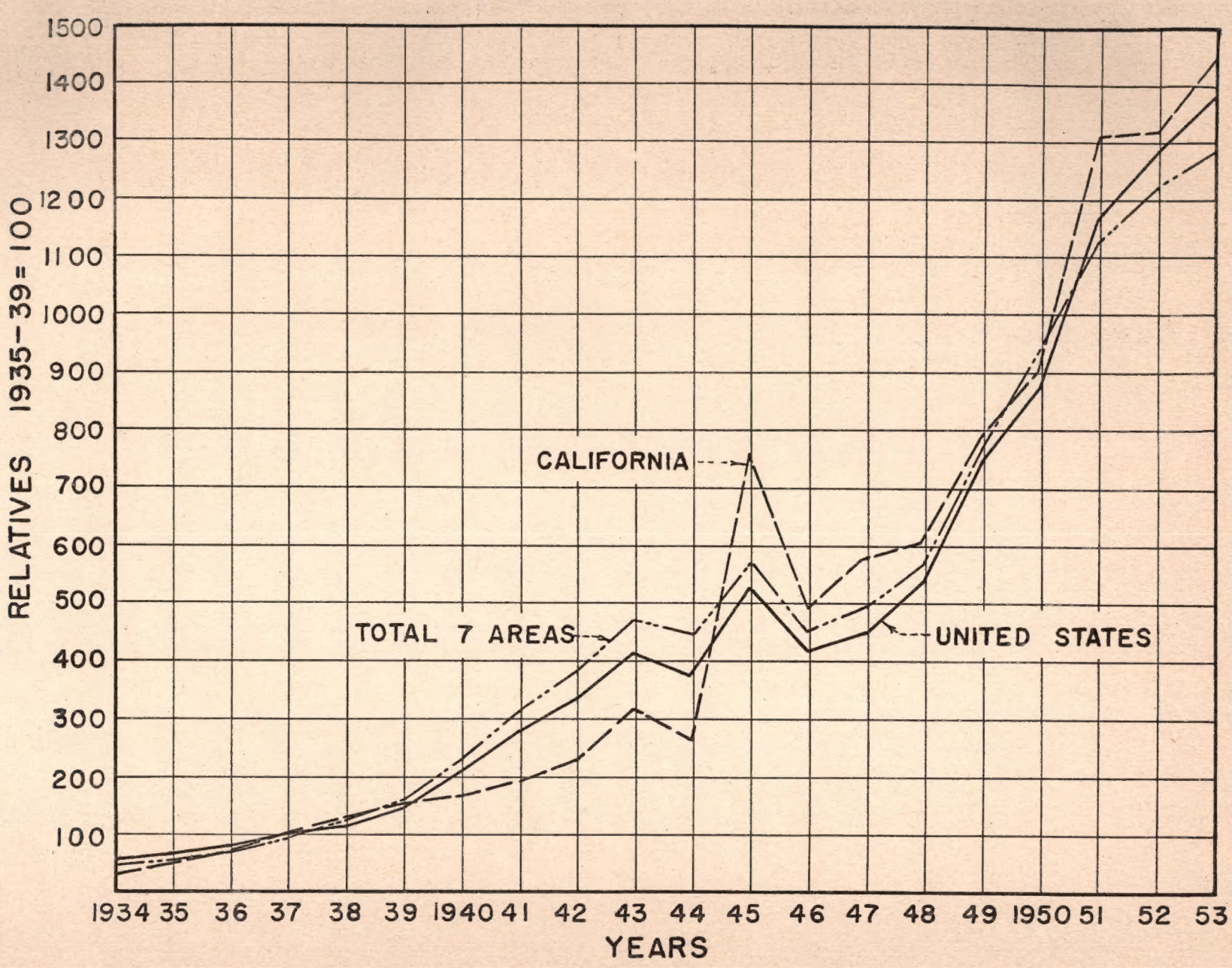

FIGURE 1: RELATIVE CHANGES IN COMMERCIAL BROILER PRODUCTION, SELECTED AREAS, 1934-1953. (1935-39=100)

SOURCE: APPENDIX TABLE 28.

hatching egg producer, the hatchery, the producer, the credit agency, and the processor. The Western Regional Marketing Committee is conducting economic studies of the role of each of these in influencing broiler output. This study is restricted to the economic aspects of broiler chick hatchery operations in California.

OBJECTIVES

The objectives of this study are:

1. To compare prices for broilers in California with those in other parts of the country;

2. To describe short-run fluctuations in broiler production as indicated by broiler chick placements in California and other major commercial broiler areas;

3. To examine the organization of the broiler chick hatchery industry in California and examine price and production policies of the industry which influence variations in broiler chick hatchings.

BROILER PRICE FLUCTUATIONS

One of the major difficulties in analyzing short-run changes in broiler prices is the absence of reliable statistics of broiler marketings. The best available measure of production is broiler chick placements three months previously. After making an adjustment for mortality, annual placement figures probably accurately represent annual production. However, weekly chick placements may not represent weekly broiler production because of differences in the rate of growth of some flocks, attacks of disease, and differences among flocks in maturity and weight at time of sale.4/

Since 1949, monthly estimates of broiler marketing in the Del-Mar-Va area have been available. These figures are quite different from those of lagged chick placements. This difference indicates that either the placements or the marketing data are incomplete or inaccurate for a given area, or that weekly changes in placements are not an indication of weekly changes in production. It is more likely that the placement and production data

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4/ Judge, George G. Some Data and Graphs Pertaining to the Connecticut and United States Broiler Industry. Connecticut Agricultural Experiment Station, Storrs: pp. 4 & 8. July 1952. (Processed).

are incomplete since reporters cannot cover all sources of supply as well as shipments into and out of an area.

A complicated relationship of mutual causation exists between broiler prices and output. The amount marketed in any period influences the price which is obtained in that period, provided other factors remain constant, but price then has an influence on future supplies by affecting anticipations of future profit.

The result of this mutual interdependence of price and supply, the short period of production for broilers, and the high variable cost of production are fluctuations best described by the cobweb theorem of production.5/ This theorem says that price and production of the commodity fail to reach a satisfactory equilibrium when prices are largely determined by current supply (storage cannot be used as a reservoir for excess production) and supply is largely determined by the price in the preceding period. The broiler industry fits this description to a high degree. Its price and production changes are similar to, yet lack the regularity of the price cycles of the beef and hog industries.6/

The nature of the production system for broilers makes it subject to greater fluctuations in output than many other agricultural enterprises. The short production period and the high proportion of variable costs to total costs are dominant characteristics. The relatively low fixed capital requirements and the ready availability of operating capital permit producers to enter the field with ease. Studies show that variable costs make up more than 90% of the total cost of producing broilers with feed and chicks alone comprising over 80% of the total. An industry with characteristics of this type has a special need for full understanding of the conditions leading to production decisions.

The influence of broiler production on prices has been shown in regression analyses. One study showed that about 77 per cent of the variations in the monthly farm price of broilers in the Del-Mar-Va area were

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5/ Ezekiel, Mordecai. "The Cobweb Theorem." Quarterly Journal of Economics Vol.52, No.2:pp.255-280. February 1938.

6/ Shepherd, Geoffrey S. Marketing Farm Products. The Iowa State College Press, Ames: pp. 73-85. 1946.

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associated with changes in the Bureau of Labor Statistics index of wholesale prices, the quantity of farm chickens sold, weekly average chick placements three months earlier, and time.[7] Many other less sophisticated studies have shown the direct interrelationship of broiler chick placements and broiler prices.[8]

Movements of farm prices of broilers in different sections of the country show great similarity. This is illustrated in figure 2. The coefficient of correlation between monthly average farm prices of broilers in the United States and in the Pacific Coast states for the ten years 1943-1952 was .7933.[9] This indicates that broiler prices in any one section of the country are not fully insulated from price changes in other sections. There is a nation-wide price pattern for broilers made effective by the freedom and ability to ship fresh processed or frozen broilers from one region to another. This fact, which links the changes in production and demand in one section with all others, is of major importance to any study of changes in production in one state or region.

The organization of the market for broilers in California encourages a close association of local with national prices. Several of the larger processors are also national meat packers with processing plants throughout the country. The management of these companies keeps a close watch on prices paid in various parts of the country and shifts supplies to hit the best markets. In addition, other wholesalers in major markets in California are willing to buy broilers from out-of-state sources and sell them wherever possible.

Although there is some attempt to differentiate the broilers sold by some processors according to brand name, there are many price conscious retailers in the cities who will accept unbranded merchandise from any

---

7/ Brandow, G. E., E. W. Learn and R. L. Baker. Broiler Production and Price Relationships. Pennsylvania State College Progress Report No. 73: p. 22. May 1953.

8/ See: Weekly Del-Mar-Va Broiler Chick Reports. Agricultural Marketing Service, U.S. Department of Agriculture, Salisbury, Maryland.

9/ These data furnished through the courtesy of the Agricultural Marketing Service, U.S. Department of Agriculture.

[illegible] between the price of commodities in different localities of this country under conditions of perfect competition. This is illustrated in Fig. 6. The coefficient of correlation between monthly average farm prices of broilers in the United States and in the Pacific Coast states for the ten years 1923-1932 was .7933.[1] This indicates that weather prices in any one section of the country are not fully insulated from price changes in other sections. There is a nation-wide price pattern for broilers more effective by the freedom and ability to ship fresh processed or frozen broilers from one region to another. This fact, which links the changes in production and demand in one section with all others, is of major importance to any study of changes in production in one state or region.

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[1] Brandow, G. E., E. W. Lorenz and K. L. Kelker. Broiler Production and Price Relationships. Pennsylvania State College Progress Report No. 73, p. 20. May 1933.

[2] Under Federal-State Market Reporting. Agricultural Marketing Service, U.S. Department of Agriculture, Washington.

[3] These data furnished thru the courtesy of the Agricultural Marketing Service, U.S. Department of Agriculture.

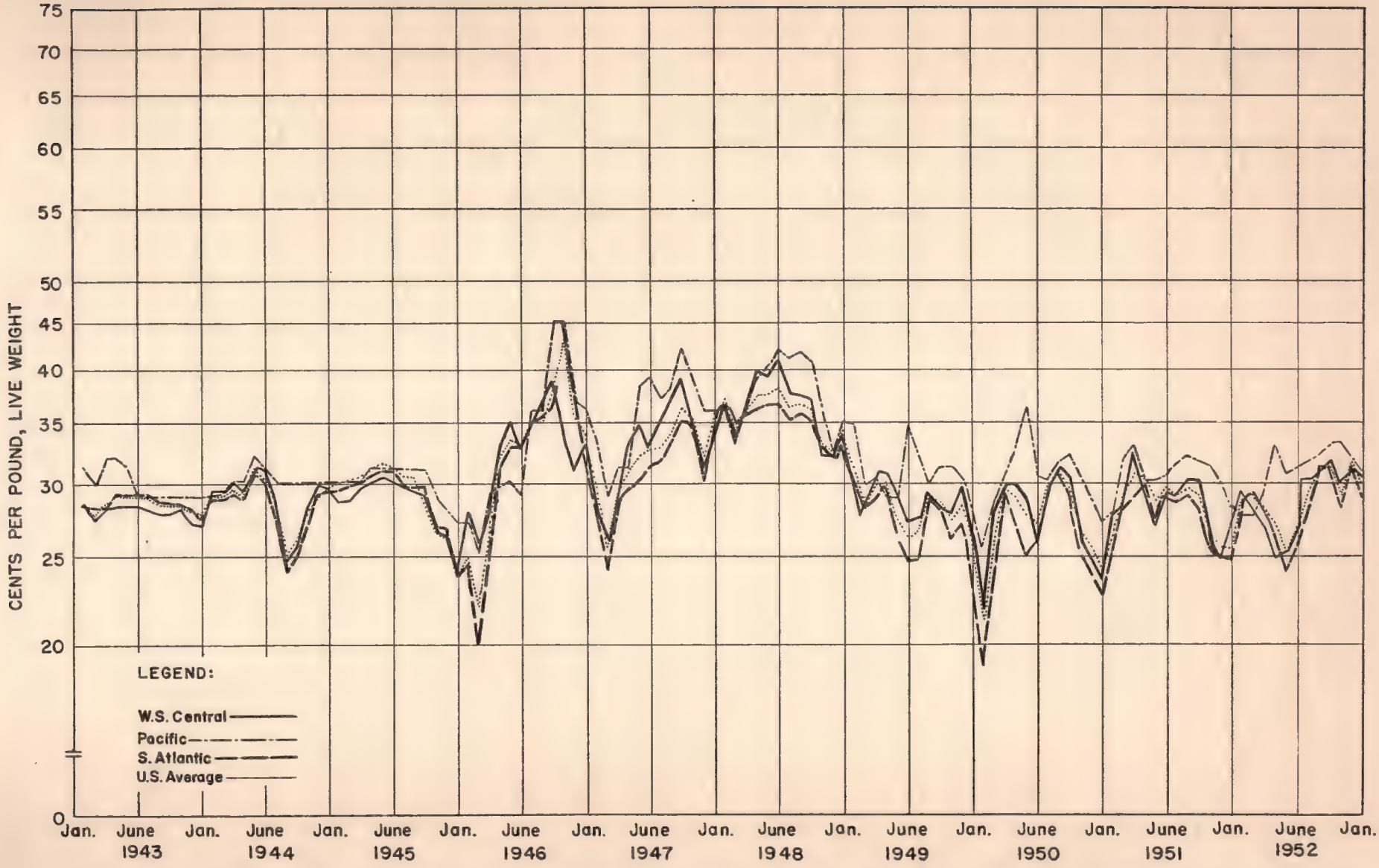

FIGURE 2: FARM PRICE OF COMMERCIAL BROILERS, THREE MAJOR REGIONS AND U.S. AVERAGE BY MONTHS, 1943–1952.

SOURCE: AGRICULTURAL PRICES, AGRICULTURAL MARKETING SERVICE, U.S.D.A.

source. There is little effort being made in California to "educate" consumers to demand a local product. If any barriers exist to the marketing of out-of-state broilers in local markets, they are quite ineffective.

The presence of a nationwide pattern of prices for broilers, when coupled with a normal deficit supply status for the state of California, has definite implications for the influence of changes in local output on local prices. The most important implication is that changes in the national broiler price rather than changes in local supply are the primary influence on local prices. California is a major producer of broilers but its total output is a small proportion of the national total.

Variations in the local supply of broilers are of more influence in depressing the local price than in raising it. Deficits in local production will raise local prices to the level of the Arkansas and Texas price plus freight and the deficit will be filled by greater in-shipments.

Increases in local supplies might drive local prices well below the national level. The logical form of relief would be diversion of some supplies to other areas. However, if no sales contracts and experience in selling local surplus production in other areas had been developed, the local area would have to suffer as the market works off the glut.

FLUCTUATIONS IN BROILER CHICK PLACEMENTS

A study of changes in placements of broiler chicks in the major broiler producing regions gives some clues about the source of complaints concerning broiler prices. Placements in three of the large commercial broiler areas were selected for special study. These three were the Del-Mar-Va area, North Georgia, and Arkansas. Total broiler chick placements in these three areas were over 50 per cent of the total of 11 important commercial producing areas in 1953. Relatively large fluctuations in production of broilers in one or all of them could influence broiler prices throughout the country.

An examination of the original data on chick placements in these areas shows a definite seasonal pattern of production in each. Although the exact timing and the magnitude of the pattern was different, broiler chick placements were highest in the months of March and April and were lowest in the months of August and September. In addition to a seasonal pattern of

placements, the trend of placements was studied for the three years, 1951, '52, and '53.

The trend in Georgia was upward with output in 1953 exceeding that in 1952 by 10 per cent and output in 1952 exceeding that in 1951 by 20 per cent. There was little or no trend of placements in Arkansas during these three years--annual output remained about steady. Annual broiler chick placements in Del-Mar-Va varied up and down. The output was downward from 1951 to 1952 and then slightly upward from 1952 to 1953 but not returning to the output of 1950.

The most obvious changes in placements from week to week in these areas were those not related to seasonal or trend patterns. They were the erratic changes--those in response to economic or physical factors other than those of annual or seasonal significance.10/ These erratic changes in placements were isolated11/ from the others and were plotted in figure 3. They show that during the calendar years 1951-52-53, changes in broiler chick placements took place which were of such magnitude that they could not fail to effect greatly the subsequent output of broilers on the market and hence the price received by producers. Fluctuations in placements of more than 20 per cent above or 20 per cent below that accounted for by trend and seasonal changes occurred in each of the areas. On at least one or two occasions in each year, each area experienced an increase or decrease in placements of as much as 40 or 50 per cent of normal output in a period of 3-4 weeks. All the areas studied were alike in this respect.

It can be seen that with few exceptions the erratic changes in placements in the three areas occurred at about the same time. This is of

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10/ The reader will note that these fluctuations have not been called cyclical because of their irregularity, although they are similar in origin to other livestock price cycles.

11/ Trend in placements was obtained by plotting a 52-weeks moving average of the data for each area. The seasonal pattern of placements was obtained by calculating the ratio of weekly output to the weekly average for each year. This series was applied to the trend values to obtain a figure for each week described as "normal" output--that which would have occurred if the annual total for each year were the same as actually occurred and the average seasonal pattern had been obtained. Actual output was then charted as a percentage of "normal" output.

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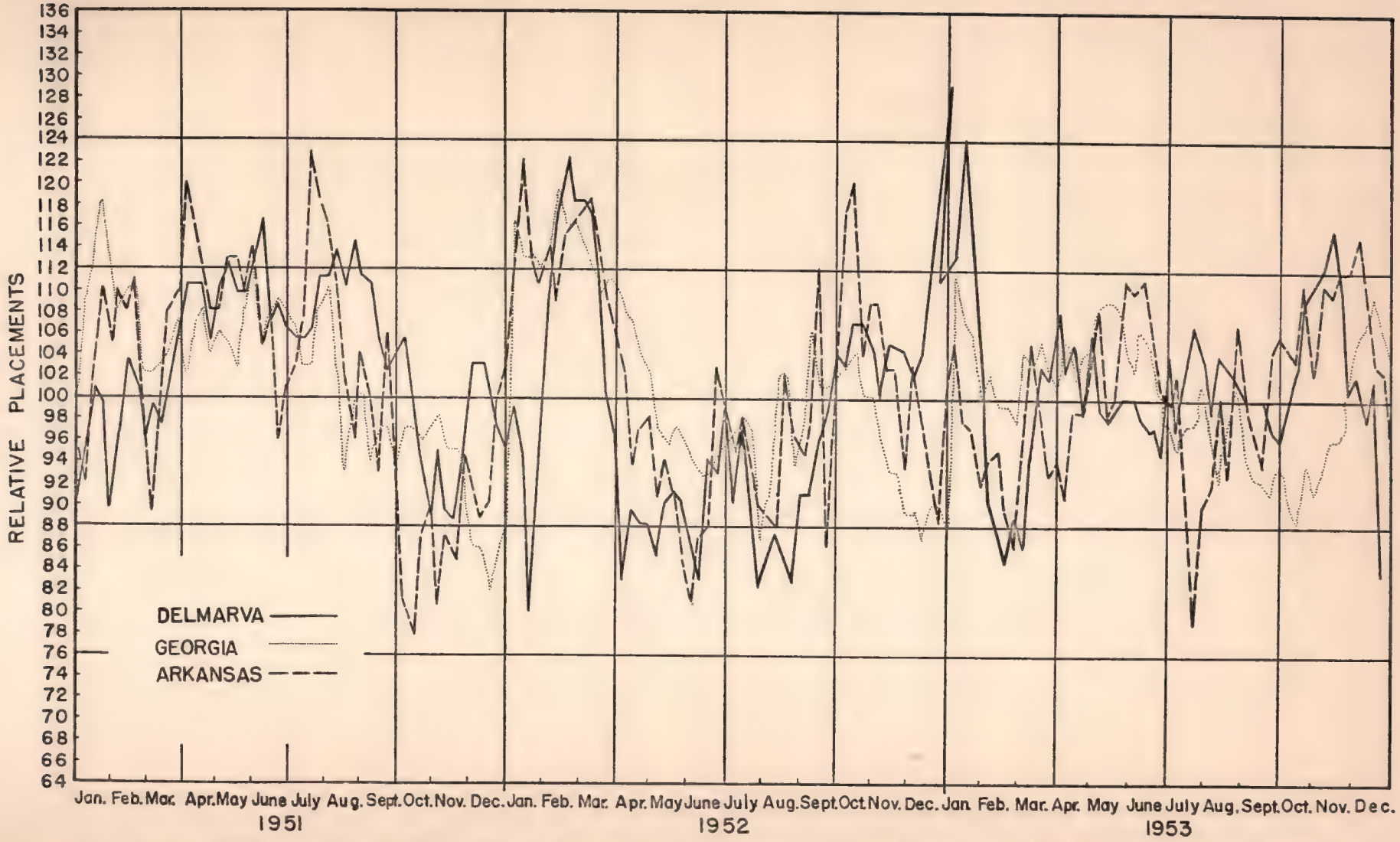

FIGURE 3: BROILER CHICK PLACEMENTS RELATIVE TO "NORMAL"* PLACEMENTS IN THREE MAJOR PRODUCTION AREAS, 1951-1953.

SOURCE: CALCULATED FROM WEEKLY BROILER CHICK PLACEMENT REPORTS, A.M.S., U.S.D.A.

*DEFINED IN TEXT.

greatest significance to understanding price and production change. It means that the agencies in each area responsible for such changes were influenced by the same factors and responding in the same fashion to them. The large output from these three areas would have an important influence on nationwide price of broilers almost regardless of output decisions in other areas.

The isolation of erratic changes in broiler chick placements in California could not be made because placements data have been published only since November 1952. It is apparent however, from a study of the placements data available for California that fluctuations in output there were much smaller than those in the other regions. The reasons for this are not clear--only a study of the factors affecting output decisions of hatcheries, processors, and producers will reveal the reasons. This study will attempt to reveal some of the fundamental conditions affecting broiler output.

A premise of this series of studies, of which this is the first, is that a greater degree of stabilization of output than now exists is a desirable goal for the entire industry. Perfect stabilization exclusive of trend and seasonal changes is not desirable since that would imply that there is no response to short-run changes in demand.

One criterion for determining the upper limit to desirable changes in output would be that level of production which would yield only variable costs of production for the majority of efficient producers. But this goal is not attainable because we cannot determine costs accurately and they differ widely from producer to producer. Even if this cost could be determined, output control of the broiler industry would require much greater degree of control over freedom of producers and others to enter the business, or to expand or contract their businesses than is now contemplated.

One alternative to imposed output control is the furnishing of such information and analyses that production will voluntarily be controlled at some desirable level by the agencies making the basic production decision. Hence the role of the hatchery, as well as other agencies, in the basic production decision needs to be examined.

The desirability of greater stabilization of broiler output is recognized by the industry. Some areas already have achieved desirable stability. This study will not attempt to determine the limits of a desirable flow of broilers to market, or the scheme for implementing such a flow. It will be limited to an analysis of the relation of hatchery price and production policies to fluctuations in broiler chick output. The full implications of this relation will become apparent and useful only when the relation between other agencies and output, and the manner in which these agencies affect one another are fully known and explained.

ECONOMIC CHARACTERISTICS OF BROILER CHICK HATCHERIES

The source of data for the hatchery portion of this study was the 60 largest broiler chick hatcheries in California. Nineteen of the 60 produced and sold only broiler chicks during the period of this study. The remainder produced both flock-replacement and broiler chicks. The 60 hatcheries contacted for data and information produced about 85 per cent of the total broiler chick output of the state in the year 1951-52.

The location of the hatcheries contacted is shown in figure 4.

Age and Size Distribution.--The distribution of the hatchery population used in this study by output and by years in business at their present location is shown in table 1. There was little or no relation between the age and the size of these hatcheries. These figures indicate that the broiler hatchery industry included firms of all ages and all sizes. There was no particular concentration of firms in any of the large, medium, or small output classifications.

The number of firms in the different age groups was also fairly evenly distributed. The fact that one quarter of the hatcheries were of a group which started business since World War II indicates a response to the requirements for more chicks as the broiler industry expanded.

These differences in size of hatchery fit the variations found in production practices among broiler growers in the state. Broiler growing is carried on by two main systems of production--the continuous system and the batch system. These systems, in turn, are adopted by producers

FIGURE 4: LOCATION OF THE SIXTY BROILER CHICK HATCHERIES INCLUDED IN STUDY, 1951- 1952.

STATE OF CALIFORNIA

Table 1

Distribution of Major Broiler Chick Hatcheries in California by Number of Years at Present Location and by Annual Broiler Chick Output per Week, July 1, 1951 to June 30, 1952

Annual Average Broiler Chicks Per Week (000)	Years in Business at Present Location				
	1 - 5	6 - 15	16 - 30	31 & up	Total
	(Number of hatcheries)				
0- 4.9	2	7	2	3	14
5- 7.9	0	2	5	0	7
8-14.9	6	3	7	2	18
15-29.9	2	1	0	3	6
30-49.9	3	2	4	1	10
Over 50	1	0	3	1	5
Total	14	15	21	10	60

to best fit the marketing system of the community in which they live.[12/] Each system has a number of advantages and disadvantages. The hatcheries of the state must adapt their operations to the needs of these different systems of production. The batch system operates on the principle of "all-in all-out," in which the size of each flock is usually about 5,000 or more. Some hatcheries which can furnish this many chicks of uniform age and breed at one time must be available. On the other hand, the continuous system of growing broilers is one in which a smaller number of chicks (usually 100-600) is accepted every week or two weeks and grown to the proper weight. Smaller-sized hatcheries can handle the requirements of continuous system growers.

The size distribution of the hatcheries included in this survey reveals something of significance to the industry's production policy and to the structure of competition among the hatcheries in the state. The relative importance of different sized hatcheries in terms of total output is shown in figure 5. The five largest hatcheries in this study

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12/ Abbott, John C. Fryer Marketing in the East-Bay San Francisco Area, California. University of California Agricultural Experiment Station, Giannini Foundation Mimeographed Report No. 146. March 1953.

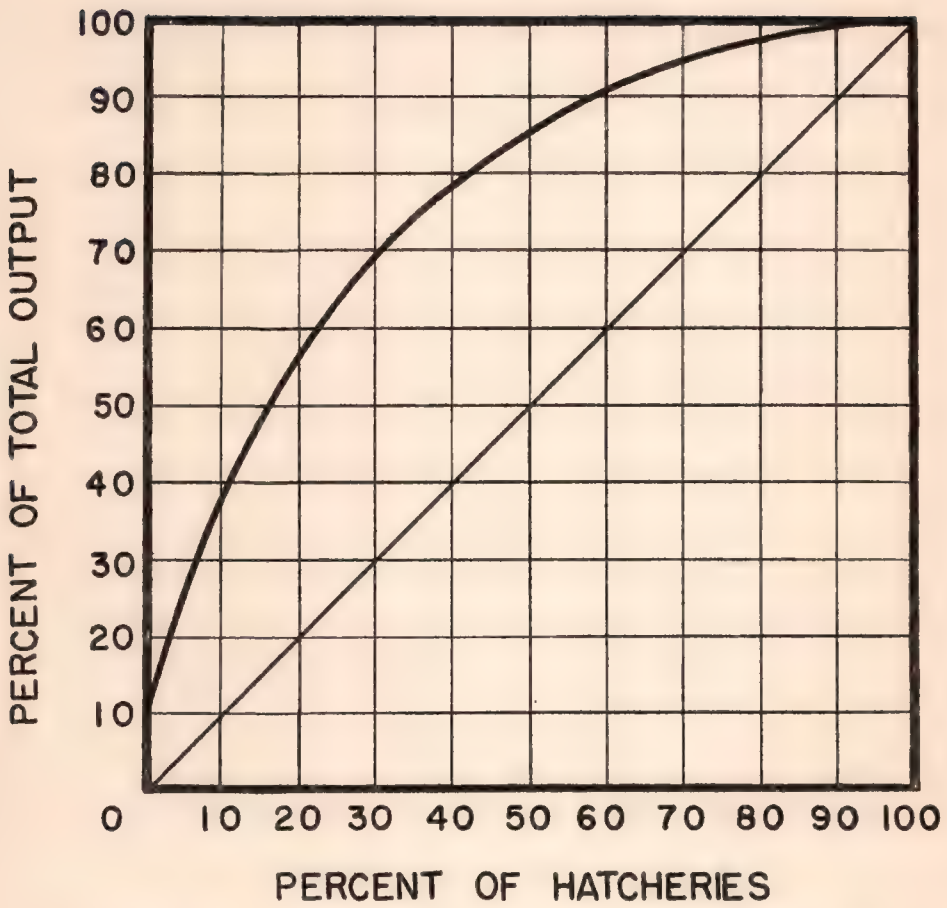

FIGURE 5: CUMULATIVE DISTRIBUTION OF TOTAL BROILER CHICK OUTPUT, CALIFORNIA, 1951-1952.

SOURCE: CALCULATED FROM DATA COLLECTED BY AUTHORS.

(8.5 per cent of total) produced over 33 per cent of the chicks sold by all 60 hatcheries, and the 30 largest ones (50 per cent of the total) produced over 84 per cent of the chicks.

Integration with Other Activities.--Relatively few broiler hatcheries were integrated with other business enterprises to carry their products toward consumers. Only 4 of the 60 combined chicken processing with hatching and only 6 of the 60 combined retailing with hatching (table 2). Three hatcheries had a feed mill. There was some overlapping here in that some hatcheries were combined with both feed mills and processing plants. A large number of the hatcheries, however, had facilities for growing broilers to market age and were therefore growers to some extent. One third of the hatcheries (22) had some growing facilities for use when the market for broiler chicks did not take their total output. Few of the 60 hatcheries in the state raised, as a regular practice, any of the chicks they hatched.

Hatcheries have integrated the production of hatching eggs with their business more than other activities. About one quarter of all hatcheries contacted obtained all their hatching eggs from their own flocks. The main reason given for this was to achieve stability and dependability of supply of hatching eggs. Other reasons given for keeping their own flocks were: greater control over quality of eggs produced, better control over breeding stock, or the opportunity to increase income through this activity. Several others (number unknown) kept flocks for a portion of their hatching egg needs and bought the remainder on the open market.

Size of Market Served.--California broiler hatcheries shipped their chicks to many areas. There appeared to be considerable criss-crossing of market areas by many of the hatcheries. Table 3 shows the distance in mileage traveled by "most" of the chicks from each hatchery in going to their destination. Most of the hatcheries sold both to local and to distant buyers. Therefore, the information in table 3 is incomplete but gives a general idea of the market area served. Several hatcheries sold to buyers in other states in the West and to buyers in some foreign countries.

Table 4 presents more complete data on the shipments of broiler chicks out of California in the year 1951-52. It shows the proportion of total sales shipped out of state by each of the 16 hatcheries which had

(6.5 per cent of total) produced over 33 per cent of the pickles sold by all
over 80 per cent of the states.

[illegible] Relatively few bottling
bottled domestic. Only 1/5 of the 60 combined chicken processing with
hatching; and only 6 of the 60 remained retailing with hatching (table 2).
These hatcheries had a fixed mill. There was some overlapping here in that
some hatcheries were combined with both feed milling and processing plants.
A large number of the hatcheries, however, had facilities for roasting
broilers to market age and were therefore rumored to send excess. One third
of the hatcheries (22) had some growing facilities for use when the market
for broiler chicks did not take their total output. Five of the 60 hatcher-
ies in the close vicinity, as a result partially, any of the others they

Hatcheries have increased the production of broilers more with their
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reason given for this was to achieve stability and dependability of supply
of hatching eggs. Other reasons given for keeping their own flocks were
[illegible]
stock, or the opportunity to increase income through this activity.
[illegible]
[illegible] market.

[illegible]
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gives a general idea of the market area served. Several hatcheries sold to
buyers in other states in the West and to buyers in some foreign countries.

Table 4 presents more complete data on the shipments of broiler chicks
out of California in the year 1951-52. It shows the disposition of total
value shipped out of state by each of the 10 hatcheries which had

Table 2

Additional Activities of Major Broiler Chick Hatcheries in California by Frequency of Occurrence, July 1, 1951 to June 30, 1952

Additional Activities	No. of Hatcheries
Operating feed mill	3
Processing plant	4
Retailing broilers	6
Growing broilers to maturity (some)	22
Hatching egg production	17
Number of hatcheries with no additional activities	25

Note: Some hatcheries had more than one additional activity.

Table 3

Distance of Customers of Major Broiler Chick Hatcheries in California from Hatchery, by Output of Hatchery, July 1, 1951 to June 30, 1952

Distance in Miles	Most Distant Area Served				Area Mostly Served			
	Annual Average Broiler Chicks Hatched Per Week (000)				Annual Average Broiler Chicks Hatched Per Week (000)			
	0 - 15	16 - 40	41 - 100	Over 100	0 - 15	16 - 40	41 - 100	Over 100
	(Number of hatcheries)				(Number of hatcheries)			
Local	8	3	0	0	15	3	0	0
Up to 25	6	0	0	0	6	0	0	0
25 - 75	8	0	0	0	5	0	1	2
75 - 150	4	1	0	1	7	4	0	0
150 - 250	0	2	1	0	0	3	1	0
250 - 350	1	0	1	0	1	0	1	0
Statewide	3	0	1	1	4	0	2	1
International	0	1	0	0	0	1	0	0
Utah	2	2	1	0	1	0	0	0
Nevada	1	0	0	0	0	0	0	0
Arizona	2	1	0	0	0	1	0	0
Colorado	1	0	0	0	0	0	0	0
Hawaii	3	1	1	0	0	0	0	0

Hancock	3	1	1	0	0	0	0	0
Coleraine	1	0	0	0	0	0	0	0
Tallaght	2	1	0	0	0	1	0	0
Navan	1	0	0	0	0	0	0	0
Ards	5	2	1	0	1	0	0	0
Portadown	0	1	0	0	0	1	0	0
Shelbourne	3	0	1	1	4	0	2	1
Sligo - Cup	1	0	1	0	1	0	1	0
Limerick - Cup	0	2	1	0	0	3	1	0
Cork - Cup	4	1	0	1	1	4	0	0
Sligo - Sligo	0	0	0	0	2	0	1	3
Derry - Derry	3	0	0	0	0	0	0	0
Bohemians	6	3	0	0	12	3	0	3

Table 4

Sales of Chicks by Major Broiler Chick Hatcheries in California to Out-of-State Buyers, by Size of Operation, by Quarters, July 1, 1951 to June 30, 1952

Annual Average Broiler Chicks Hatched Per Week (000)	Total Number Hatcheries in Each Category	Number Hatcheries Selling Chicks Out of State	Approximate Percentage of Total Sales Out of State in Ea. Quarter			
			Quarters			
			1	2	3	4
0 - 4.9	14	1	5	5	5	5
5 - 7.9	7	1	35	58	58	38
8 - 14.9	18	6	(1) 50	50	50	50
			(2) 25	25	25	25
			(3) 15	15	15	15
			(4) 20	20	20	20
			(5) 5	5	5	5
			(6) 5	5	5	5
15 - 29.9	6	3	(1) 75	75	75	75
			(2) 5	5	5	5
			(3) 65	65	65	65
30 - 49.9	10	4	(1) 0	0	15	15
			(2) 5	5	5	5
			(3) 10	10	10	10
			(4) 5	0	5	5
Over 50	5	1	5	5	5	5

Table 4

Out-of-State Movers, by Size of Operation, by Quarters,
July 1, 1951 to June 30, 1952

out-of-state sales in that year. These data are also arranged by size of hatchery.

A smaller proportion of the smallest sized hatcheries had out-of-state sales than did any other size category. They served a local market primarily. The larger hatcheries not only must have looked farther away for a portion of their business, but were better equipped to handle special orders which arose.

The proportion of total sales by each hatchery in this category ranged from 5 to 75 per cent. There was no relation between size of hatchery and proportion of chicks shipped out of state. The proportion shipped out of state did not vary greatly in the different quarters of the year. This indicated that California hatcheries were not using this outlet as a dumping ground for their surplus broiler chicks.

From these data, it is estimated that less than 5 per cent of the total broiler chick output in the state in this period was sold to out-of-state buyers.

Frequency of Hatching.--Several factors influence the frequency with which hatches, or batches of eggs, are set and chicks taken off. Among them are the economical use of labor time, the total output of the hatchery, and the length of time it is desirable or safe to keep hatching eggs prior to incubation. Appendix table 29 shows that a majority of the hatcheries shifted from one hatch per week during the slow season, July to December, to two hatches per week during the more active season, January to June. Those hatcheries which took off 2 or 3 hatches per week in July to December usually shifted to 4 or 5 hatches per week during January to June.

There was a definite relation between the number of hatches per week and the output of the hatcheries. Nearly all of those having less than 5,000 broiler chicks per week took off one hatch per week. Those with moderate output, 8,000 - 50,000 per week, hatched primarily twice per week; those with an output of over 50,000 chicks per week usually hatched four times per week. Increases in output were accomplished by increasing the number of hatches rather than the size of each hatch.

operations going in that year. These data are also affected by size of

HATCHERY PRODUCTION POLICY

Production policy refers to the manner in which a business firm adjusts its product (broadly considered) or the volume of output in such a way to make the most income or reduce its losses to a minimum. This statement includes only those adjustments which are under control of or can be used at the discretion of the hatchery operator. In addition to these adjustments, consideration will be given to those which are imposed by outside forces, such as weather or competition, over which the operator has more limited control.

There are many opportunities for hatchery operators to adjust their product and the volume of output in response to economic forces. Among them are (1) operating at full or less-than-full capacity, (2) changing the volume of hatching eggs made available, and (3) changing the breed or strain of chick offered to buyers. It is the objective of this section to define or describe the production and particularly the output policies of California broiler hatcheries, and to explain some of the forces affecting those policies.

Hatchery Output and Hatchery Capacity.--The distribution of the 60 hatcheries in this study according to their rated capacity[13/] (either furnished the authors or as published in 1952 membership in the National Poultry Improvement Plan) is shown in table 5. It shows that the commercial broiler hatcheries in California are fairly evenly distributed among the various capacities. It shows that the range in capacity is great--the largest hatchery having as much as 20 times the capacity of the smallest.

Many hatcheries did not use their incubators to full capacity at all times. Table 6 shows the relation between hatchery capacity and hatchery output for the different sizes of the 60 hatcheries in this study. Table 7 shows the same relation for broiler chicks only. Most (41) of the hatcheries in this study produced both broiler and flock-replacement chicks.

The broad relationship of greater output with greater capacity of hatcheries is shown in tables 6 and 7. There was also great variation in

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13/ Hatchery capacity is defined as the total number of eggs which can be placed in incubation at any one time. The period of incubation of chicken eggs is three weeks; therefore, capacity adjusted for hatchability is a rough measure of the maximum output of a hatchery in any three-week period.

Production policy refers to the manner in which a business firm adjusts its product (broadly considered) or the volume of output in such a way to make the most income or produce the losses to a minimum. This statement includes only those adjustments which are under control of or can be used by the discretion of the battery manufacturer. In addition to these adjustments, consideration will be given to those which are imposed by outside forces, such as weather or competition, over which the operator has more limited control.

There are many opportunities for battery operators to adjust their product and the volume of output in response to economic forces. Among them are (1) operating at full or less-than-full capacity, (2) changing the volume of batteries once made available, and (3) changing the brand or grade of which offered to buyers. It is the objective of this section to discuss or describe the procedure and particularly the output policies of California dealer batteries, and to explain some of the forces affecting them.

Battery Output and Battery Capacity.--The distribution of the 50 batteries in this study according to their rated capacity[13] (either furnished the authors or as published in 1958 membership in the National Battery Improvement Plan) is shown in table 5. It shows that the commercial or dealer batteries in California are fairly evenly distributed among the various capacities. It shows that the range in capacity is great--the largest battery having as much as 30 times the capacity of the smallest.

Many batteries did not use their locomotives to full capacity at all times. Table 6 shows the relation between battery capacity and battery output for the different sizes of the 50 batteries in this study. Table 7 shows the same relation for dealer cities only. Most (41) of the batteries in this study produced both gas-fuel and flock-replacement cells. The broad relationship of greater output with greater capacity of battery is shown in tables 6 and 7. There was also great variation in

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[13] Rated battery capacity is defined as the total number of cells which can be discharged at any one time. The period of incubation or discharge is three hours. Rated temperature, capacity adjusted for battery life is a term of the maximum output of a battery in any three-week period.

Table 5

Distribution of Major Broiler Chick Hatcheries in California by Capacity, July 1, 1951 to June 30, 1952

Capacity (000)	Number of Hatcheries
1 - 60	12
61 - 120	16
121 - 200	11
201 - 350	12
351 - 800	9

Source of data: Agricultural Research Administration, U.S.D.A. Hatcheries and Dealers Participating in the National Poultry Improvement Plan, A.H.D. 36, Revised December 1952, and data collected by authors.

Distribution of Major Broad- Chick Webbworms in Cattle Pens by Capacity, July 1, 1951 to June 30, 1952

Capacity (000)	Number of Webbworms
[illegible]	11
61 - 120	16
121 - 300	11
301 - 500	12
501 - 900	9

Webbworms and Defoliators Participating in the Medicaid Penalty Improvement Plan, A.H.D. 36, Revised December 1952, and Data Collected by Webbers.

Table 6

California Broiler Chick Hatcheries Classified by Capacity and Total Output
(Broiler Chicks and Flock Replacement Chicks)
July 1, 1951 to June 30, 1952

Capacity (000)	Annual Average Total Output per Week (000)					
	0 - 4.9	5 - 7.9	8 - 14.9	15 - 29.9	30 - 49.9	Over 50
	(Number of hatcheries)					
1 - 60	6	5		1		
61 - 120	3	2	9	1	1	
121 - 200			6	4	1	
201 - 350			1	3	6	2
351 - 800					1	8

Source of data: Agricultural Research Administration, U.S.D.A. Hatcheries and Dealers Participating in the National Poultry Improvement Plan, A.H.D. 36, Revised December 1952, and data collected by authors.

Table 7

California Broiler Chick Hatcheries Classified by Capacity and
Broiler Output, July 1, 1951 to June 30, 1952

Capacity (000)	Annual Average Broiler Output per Week (000)					
	0 - 4.9	5 - 7.9	8 - 14.9	15 - 29.9	30 - 49.9	Over 50
	(Number of hatcheries)					
1 - 60	8	3	1			
61 - 120	5	3	7		1	
121 - 200		1	7	2	1	
201 - 350	1		3	3	5	
351 - 800				1	3	5

Source of data: Agricultural Research Administration, U.S.D.A. Hatcheries and Dealers Participating in the National Poultry Improvement Plan, A.H.D. 36, Revised December 1952, and data collected by authors.

Table 6

Number of Broiler Chickens Condemned on Each Quality on Each Quality Grade
(Broiler Plants and Plant Equivalents Only)
July 1, 1951 to June 30, 1952

Grade	Quality 1	Quality 2	Quality 3	Quality 4	Quality 5
1 - 60	6	5	1		
61 - 120	3	2	9	1	1
121 - 200			6	1	1
201 - 350			1	3	6 2
351 - 800				1	8

Source of Data: Agricultural Marketing Service, U.S.D.A.
Methods and Problems Participating in the National Poultry Improvement Plan, A.M.S. 36, Revised December 1952, and data collected by authors.

Table 7

Broiler Chicken Carcasses Classified by Condition and Grade
Processor Output, July 1, 1951 to June 30, 1952

Grade	Condition 1	Condition 2	Condition 3	Condition 4	Condition 5
1 - 60	8	3	1		
61 - 120	5	3	7		1
121 - 200		1	7	2	1
201 - 350	1		3	3	5
351 - 800				1	3 5

Methods and Problems Participation in the National Poultry Improvement Plan, A.M.S. 36, Revised December 1952, and data collected by authors.

the utilization of the capacity of the hatcheries during the year of the study. For instance, table 6 shows that firms whose capacity was 201,000 - 350,000 had a weekly output varying from 8,000 for some hatcheries to over 50,000 for others. At the same time, hatcheries whose capacity varied from 1,000 - 350,000 had about the same weekly output (from 15,000 to 30,000).

Figure 6 shows the changing relationships between broiler output, total output, and total capacity of the 60 hatcheries on an aggregate basis during the year of the study. It shows that California broiler chick hatcheries have considerable excess capacity in the fall and winter seasons and a moderate amount in the spring and summer quarters.

The ordinary maximum output per week of a hatchery is one third of the rated capacity adjusted for hatchability. In this study, hatchability is the percentage which No. 1 saleable chicks is of the number of eggs set. This figure covers losses from infertility, from embryos which failed to hatch, and from crippled and low viability chicks. Some hatcheries also consider the 2 to 4 per cent overage of chicks included in most shipments as a hatchability loss.

The excess incubator capacity shown in figure 6 is primarily a result of seasonal factors--lower demand, smaller supply of hatching eggs, and lower hatchability of eggs in the fall and winter seasons. The implications of this utilization of capacity for fluctuations in output are not clear. It is logical that the presence of excess capacity in certain months does not of itself lead to erratic fluctuations in output. It could contribute to this result only if the incentive for setting more eggs than normal existed. Hence the cause of unusual changes in output must come from orders placed by producers or their agents, or the decision by hatcherymen that the prospects for sales justify a high overset.

Seasonal Variation in Output.--The principal hatching season for all chicks hatched commercially in the United States is from January to June. When chicks of all breeds are considered, over 80 per cent of the total output is hatched in these six months, and over 60 per cent is hatched in March, April, and May.[14/] Commercial broiler chicks, however, are in demand

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14/ Kimball, E. Smith, Robert F. Moore and Paul W. Smith. Commercial Hatchery Chick Production. U.S.D.A. Statistical Bulletin 81, February 1945, p. 6.

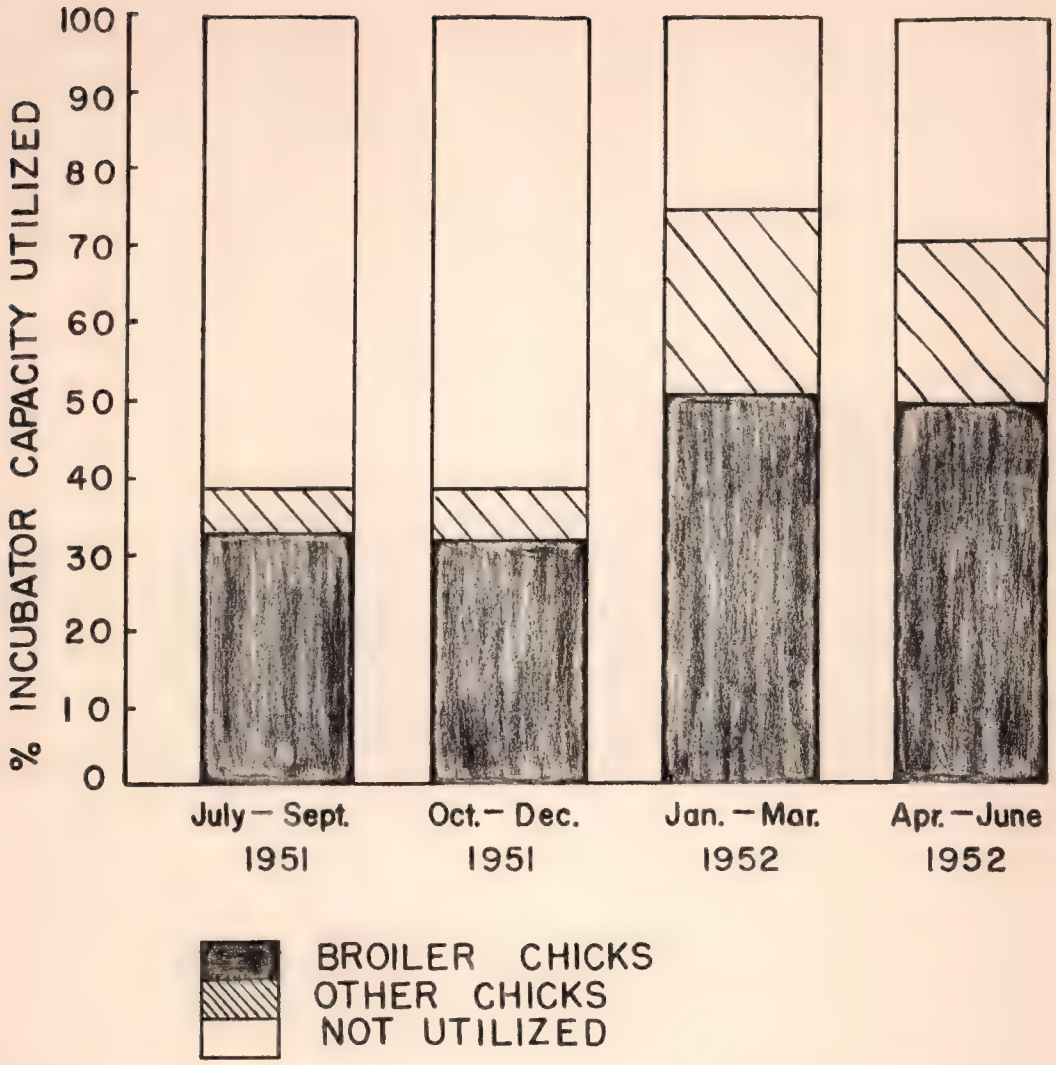

FIGURE 6 : UTILIZATION OF TOTAL INCUBATOR CAPACITY, MAJOR BROILER CHICK HATCHERIES IN CALIFORNIA, JULY 1951–JUNE 1952.

SOURCE : APPENDIX TABLE 30.

more evenly throughout the year than are flock replacement chicks. Hence there is greater stability in the hatchery industry by reason of the commercial broiler industry.

There was a greater degree of seasonal fluctuation in broiler chick placements in California than in the three other commercial broiler areas studied. This is in contrast to the fewer erratic fluctuations in California than shown in the other areas. The indexes of monthly changes in broiler chick placements for these four areas are shown below:

Month	Calif.[a/]	Del-Mar-Va[b/]	Georgia[b/]	Arkansas[b/]
Jan	96	105	91	110
Feb	118	111	104	115
Mar	120	113	111	116
Apr	123	105	110	117
May	122	103	109	111
Jun	109	100	108	104
Jul	96	95	99	98
Aug	84	88	89	86
Sep	82	90	86	74
Oct	78	90	93	77
Nov	84	95	98	88
Dec	94	103	100	105

a/ For the year 1953
b/ Average for the years 1951, 52, 53.

Seasonal changes in output in broiler chicks among the 60 hatcheries of the survey are summarized in table 8. It shows the number of hatcheries in each category of seasonality as measured by the relation of output per week on a quarterly basis to output per week on an annual basis. It shows that from July through December, 52 of the 60 hatcheries produced about the same or less than their annual rate of output. From January through June, 44 hatcheries produced above their annual rate, several reaching 200 per cent of their annual rate. Some hatcheries reported no change in their output from one month to another throughout the year of the survey. They reported that this was because they set eggs only on orders received in advance and that most of their customers remained in steady production throughout the year.

Further study of the data showed that there was little or no relationship between seasonality of output and size of hatcheries or between

[illegible]

[illegible]

[illegible]

Table 8

California Broiler Chick Hatcheries Classified by Seasonal Distribution of Broiler Chick Output July, 1951 - June, 1952

Ratio of Weekly Output per Quarter Over Weekly Output Per Year	Quarters			
	July - Sept	Oct - Dec	Jan - Mar	Apr - June
(Per cent)		(Number of hatcheries)		
0	1	1	0	0
1 - 50	5	8	0	0
51 - 75	15	17	0	3
76 - 100	29	26	16	15
101 - 125	7	6	24	20
126 - 150	3	2	16	15
151 - 200	0	0	4	7

Source of data: Appendix tables 31 and 32.

seasonality of output and the age of the firm. Old and young, large and small hatcheries showed about the same pattern (Appendix tables 31 and 32).

The changes in output in different quarters discussed above occurred in hatcheries producing broiler chicks exclusively as well as those producing both broiler and replacement chicks. Although the seasonal requirements for flock replacement chicks are greater than for broiler chicks, these hatcheries did not reduce broiler chick output in the spring and substitute replacement orders for it. Instead output of both types of chicks increased, with replacement chicks increasing the greater amount. Table 9 shows the proportion which broiler chicks were of total output of all 60 hatcheries in the survey, by size of hatcheries in the different quarters. It shows that broiler chicks made up 90 per cent of the total output of the 60 hatcheries in the fall and winter quarters but only about 73 per cent of total output in the spring and summer. Output of both types of chicks increased in the spring and summer, but output of replacement chicks increased to a greater extent. The greatest changes in output occurred in the medium and larger sized hatcheries.

Table 8

California Broiler Chick Hatcheries Classified by
Seasonal Distribution of Broiler Chick Output
July, 1951 - June, 1952

Quarters				

Source of data: Appendix tables 31 and 32.

seasonality of output and the age of the firm. Old and young, large and small hatcheries showed about the same pattern (Appendix tables 31 and 32).

The changes in output in different quarters licensed above occurred in hatcheries producing broiler chicks exclusively as well as those producing both broiler and replacement chicks. Although the seasonal requirements for [illegible] not reduce broiler chick output in the spring and consequently replacement orders for it. Instead output of both types of chicks increased, with replacement chicks increasing the greater amount. Table 3 shows the proportion which broiler chicks were of total output of all CO hatcheries in the survey, by size of hatcheries in the different quarters. It shows that broiler chicks made up 90 per cent of the total output of the 60 hatcheries in the fall and winter quarters but only about 73 per cent of total output in the spring and summer. Output of both types of chicks increased in the spring and summer, but output of replacements chicks increased to a greater [illegible].

Table 9

Broiler Chicks as a Percentage of Total Chicks Hatched in 60 Major Broiler Chick Hatcheries, by Capacity, by Quarters July, 1951 - June, 1952

Capacity (000)	Quarters				
	July - Sept	Oct - Dec	Jan - Mar	Apr - June	Annually
0- 49	92.8	90.7	94.4	94.2	93.3
50- 99	96.7	94.0	77.0	76.8	82.8
100-149	91.7	89.8	74.4	77.5	82.1
150-299	86.1	85.0	59.7	60.4	68.9
300-800	90.0	91.3	74.7	76.4	81.0
All hatcheries	90.0	90.3	72.5	74.0	79.3

Breeds of Chicks Hatched.--The breed or strain of chicks sold by a hatchery represents an important phase of production policy. Hatcheries and breeders are continually striving for strains which will grow faster on less feed, be more resistant to diseases, be more adaptable to varying climatic conditions, etc.

Table 10 shows the different breeds and strains of birds which broiler chick hatcheries produced during the period of this survey. The number of hatcheries producing New Hampshires was considerably greater than any other, indicating the degree of popularity and acceptability of this breed among the industry. About 85 per cent of all the hatcheries produced only the most popular breeds. This table also shows that only the hatcheries with the smaller output produced the less popular breeds and strains. All of the hatcheries with output of 15,000 chicks and above per week concentrated their attention on one or more of four breeds.

A special check showed that popularity in terms of number of hatcheries also meant popularity in numbers of chicks.

Market conditions frequently influence the popularity or acceptability of breeds. At the present time, the dark-feathered breeds dominate California markets. In other commercial broiler areas, a light-feathered bird is gaining in popularity. Many processors and breeders are predicting that within a few years light feathered birds will be more important in all

Table 9

Table 10

Breeds of Chicks Sold by Major Broiler Chick Hatcheries in California, by Size of Hatchery, July 1, 1951 to June 30, 1952

Breed	Annual Average Broiler Chicks Hatched Per Week (000)						
	0-4.9	5-7.9	8-14.9	15-29.9	30-49.9	Over 50	Total
	(Number of hatcheries)						
New Hampshire	10	6	12	6	9	3	46
Cornish Cross	4	2	3	1	4		14
New Hampshire Cornish Cross	3	2	7	1	2	3	18
Vantress						1	1
Austra White	2	1	1				4
Red X White			1				1
New Hampshire Nichols			1				1
Rock Hampshire Cross			1				1
Parmenter Reds	2						2
New Hampshire Reds	1						1
Leghorn	1	1	1				3

Some hatcheries listed more than one breed.

areas including California. The primary reason for this trend is that processing costs (pinning in particular) are lower and appearance is better for a light bird than for a dark one.

Surplus Cockerel Production.—The large increase in cockerel production in the spring of each year probably influences broiler prices and hence broiler output. It was shown in table 8 that broiler chick output was much greater in the spring than in the fall and winter. It was also shown (fig. 6) that the output of flock replacement chicks, and hence cockerels, was much greater in the spring. The combination of production of these two types of meat birds raises the total supply of chicken meat markedly. The erratic nature of the supply of cockerels is a disturbing factor on the

area including California. The primary reason for this trend is that processing costs (plucking in particular) are lower and appearance is better for a light bird than for a dark one.

Surplus Cockerel Production.--The large increase in [illegible] broiler output. It was shown in table 8 that broiler chick output was much greater in the spring than in the fall and winter. It was also shown (fig. 6) that the output of flock replacement chicks, and hence cockerels, was much greater in the spring. The combination of production of these two types of meat birds raises the total supply of chicken meat markedly. The erratic nature of the supply of cockerels is a disturbing factor on the

chicken meat market.15/

The number of cockerels hatched is much larger than that raised for market because most flock owners prefer to buy only the female birds. Hatcheries dispose of the cockerels as best they can. If no ready market exists at the going price (2 cents per bird was the price usually quoted the authors), they are usually destroyed to make room for more birds being hatched. They are, in effect, dumped on the market; hence have a disturbing effect on prices of broilers at the time when large numbers are being marketed. This fact could add greatly to the risk involved in broiler production.

Table 11 shows the distribution of sale of cockerels by the hatcheries in the survey. Nearly all the sales were in the spring and summer months and were evenly distributed among hatcheries of different size. These data were from the major broiler chick hatcheries only. The largest source of surplus cockerels is those hatcheries which produce flock replacement chicks only. Information concerning their output or sales policies was not obtained.

Factors Affecting Number of Eggs Set.--The number of eggs set for hatching is the most reliable guide to the hatcheryman's concept of production policy. Hatcherymen reported few broiler chicks destroyed during 1951-52 because of lack of a market for them. The high out-of-pocket cost of chicks precludes the setting of more eggs than will produce the number of chicks hatcherymen are reasonably certain of selling. The number of eggs set represents their judgment of the market for chicks, which in turn is guided by orders on hand and by their expectations of the market for broilers about 9 - 11 weeks after hatching the chicks. The clearest picture of output policy is found in studying the factors affecting the number of eggs set for hatching.

a. "Overset" policy.--Many broiler chick hatcheries attempt to reduce the risk of their business by setting only the number of eggs which with normal hatchability will produce the number of chicks for which they

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15/ The impact of additional supplies of cockerels on the price of broilers depends on the degree of competition between the two forms of meat. The two forms are adapted to and generally channeled to two different markets, hence are indirectly competitive.

The number of cockerels hatched is much larger than that needed for market because most flock owners prefer to buy only the female birds. Hatcheries dispose of the cockerels as best they can. If no ready market exists at the going price (2 cents per bird was the price usually quoted the writer), they are usually destroyed to make room for more birds being hatched. They are, in effect, dumped on the market; hence have a disrupting effect on prices of broilers at the time when large numbers are being marketed. This fact could and greatly to the risk involved in broiler production.

Table 1/ shows the distribution of sale of cockerels by the hatcheries in the survey. Nearly all the sales were in the spring and summer months and were evenly distributed among hatcheries of different size. There was some variation among hatcheries in the major broiler chick hatching only. The largest number of cockerels is the those hatcheries which produce flock replacement chicks only. Information concerning their output or sales practices was not obtained.

Marketing is the most reliable guide to the consumer's concept of standardization positive. Difficulties reported from another chicken deficient 1951-52 because of lack of a market for them. The high out-of-pocket cost of chicks precludes the existence of many more than will produce the number of chicks hatchermen are reasonably certain of selling. The number of chicks sold represents their judgment of the market for chicks, which in turn is guided by contacts on hand or their observations of the market for broilers a out - 11 weeks after hatching the chicks. The closest absence of orders is found in the spring of the broiler although the number of days out for

reduce the risk of it is achieved by stating only the number of sets which with normal hatchability will produce the number of chicks for which they

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1/ The length of the normal sequence of operations on the broiler farm is given on the figure. A distinction between the two forms of hatch- ing the terms are defined in and commonly connected to the different

Table 11

California Broiler Chick Hatcheries Reporting Sales of Surplus Cockerels, by Period of Sale, by Number Sold July, 1951 - June, 1952

Period of Sale	Number Sold (000)				
	1 - 10	11 - 50	51 - 100	101 - 200	Over 200
	(Number of hatcheries)				
Dec 1 - May 31	1	1			
Jan 1 - Mar 31		1	1		
Jan 1 - Apr 30		1		1	
Jan 1 - June 30	2	1	2		
Feb 1 - May 1	3	1	1	2	
Feb 1 - May 31	1			1	
Mar 1 - June 30	3				
Spring & Sept					1
Year-round					3

have standing orders at the time of setting. This policy attempts to leave the final production decision to other agencies. This policy shifts much of the risk of fluctuating prices for broilers over to other agencies but incurs the risk of unstable hatchery operations. Such shifting is feasible only if the broiler producers are financially able to assume the risk of price changes and maintain their production with prices unstable. It also means that the producers must have a fairly secure market outlet and not be under pressure to find a buyer for their broilers at maturity. The hatcheryman then does not make a decision about output--he simply arranges to have a certain number of hatching eggs available at certain times and carries on a technical process. Hatcheries of this type probably have little or no initiating influence on fluctuations in broiler output. Whatever changes in output they make reflect the output decisions of other agencies from whom they have orders.

Table 12 shows that about half of the major broiler chick hatcheries in the state set eggs only on order. These were mainly larger hatcheries. Changes in hatchability or in the percentage of weak or deformed chicks may

have abandon orders at the time of setting. This policy stemmed to leave the final production decision to other agencies. This policy shifts much of the risk of fluctuating prices for broilers over to other agencies but ignores the risk of unstable hatchery operations. Such shifting is feasible only if the broiler producers are financially able to assume the risk of price changes and maintain their production with price insecurity. It also means that the producers must have a fairly secure market outlet and not be under pressure to find a buyer for their broilers at maturity. The hatchery-man then does not make a decision about output--he simply arranges to have a certain number of hatching eggs available at certain times and carries out technical process. Hatcheries of this type probably have little or no initiating influence on fluctuations in broiler output. Whatever changes in output they make reflect the output decisions of other agencies from whom they have orders.

Table 12 shows that about half of the major broiler chick hatchery in the state set eggs only on order. These were mainly larger hatcheries. Changes in hatchability or in the percentage of weak or deformed chicks ma

Table 12

Factors Influencing Number of Eggs Set by
Major Broiler Chick Hatcheries in California
July 1, 1951 to June 30, 1952

	No. of Hatcheries
Set Only on Order	27
Overset Orders	33
Factors Influencing Overset:[a/]	
Price of broilers	13
Demand for layers	13
Desire for full production	10
Anticipate feel of market	8
Available eggs	6
Past history or experience	4
Turkey processing time	2
Weather	2
Season	1
Calls	1
No reason given	2

a/ Several hatcheries gave more than one reason for oversetting orders.

cause a small surplus or shortage in any hatch. The important fact is that they avoid the risk of unsold chicks resulting from a change in the market.

The remainder of the hatcheries deliberately overset or underset eggs at different times of the year. By oversetting eggs, the managers of those hatcheries made an assumption or a prediction that three weeks hence more producers will have ordered chicks than at the time of setting. The hatcheryman was predicting, or hoping, that the producers who had not yet ordered chicks would do so. In other words he was catering to some extent to the producers who were "in and outers," who did not put in a batch of chicks every period regardless of the market outlook. If the producers on whom he was counting for business did not come in, he had to seek a market for his chicks. He sometimes had to offer inducements of some kind to convince

Table 12

Factors Influencing Number of Eggs Set by [illegible]

July 1, 1951 to June 30, 1952

Set Duty or Order	
[illegible]	[illegible]
[illegible]	
Desire of brooders	13
Demand for layers	13
Desire for full production	10
Anticipated feed of broods	8
Broody hens	5
Low Mortality or [illegible]	4
[illegible]	2
[illegible]	2
[illegible]	1
Cull-	1
No reason given	2

low mortality order.

borderline-decision producers to take a batch of chicks. Otherwise, he had to raise them himself or destroy them.

Of all the factors mentioned by hatcherymen as influencing their over-set policy, the present and prospective price of broilers and demand for layers were mentioned most often. Closely related were the reasons of "desire for full production" and "anticipate feel of market." Most of these reasons imply a confidence in predicting what producers will take--how producers will react to a given economic situation. Oversetting to obtain "full production" could easily result in a burdensome surplus of chicks because of the excess capacity available.

The "desire for full production" and "available eggs" are related in that the number of eggs available will determine the maximum that can be set at any one time. This may or may not be full production. Therefore, desire for full production, which means keeping the incubators running at capacity, can only occur when sufficient eggs are available. Sufficient eggs for oversetting are more likely to be available from flocks owned by the hatchery than if the hatcheryman were free to buy only the quantity wanted at any one time. In other words, integration of hatchery operation and hatchery egg production tends to contribute to more oversetting than would occur otherwise. The desire for full production became important because the cost of hatching dropped as volume increased.

b. Hatchability of eggs.--Output policy is affected to some extent by hatchability which is related to seasonality of production of hatching eggs. Hatchability is highest in the season of greatest egg production. These two factors combine to lower the cost of eggs in that season, but at the same time to increase the risk of hatching chicks. In order to obtain an adequate supply of eggs in the short season it is usually necessary to cope with a surplus of eggs in the remainder of the year. The inducement to overset is greater under these conditions than if the supply of hatching eggs and hatchability were relatively stable throughout the year.

California broiler chick hatcheries reported hatchability ranging from 60 to 85 per cent of the eggs set during the year of the study. There was a marked difference in hatchability in different seasons (table 13). Nineteen hatcheries reported hatchability of 80 per cent in the third quarter of the year (January-April), whereas only 4 hatcheries achieved this level in the

Table 13

Hatchability of Eggs in Major Broiler Chick Hatcheries in California, by Quarters, July 1, 1951 to June 30, 1952

Per Cent	July - Sept	Oct - Dec	Jan - Mar	Apr - June
		(Number of hatcheries)		
Below 60	2	2	0	0
60 - 64	6	6	1	0
65 - 69	15	13	1	2
70	17	9	2	4
71	0	0	0	0
72	4	2	1	1
73	1	0	0	0
74	2	2	1	1
75	7	15	16	15
76	0	0	1	0
77	1	1	3	3
78	0	1	2	3
79	0	0	0	0
80 - 84	3	5	22	20
85	0	1	5	7
Above 85	0	0	3	2

2d, and only 2 achieved it in the 1st quarter. Thirteen hatcheries had only 65 per cent hatchability in the 1st quarter, whereas practically none were below 75 per cent in the 3d and 4th quarters.

Hatchability affects the cost of producing chicks and will be discussed below.

c. Availability of hatching eggs.--The number of eggs available for hatching has an influence on the number of chicks hatched. The influence is felt primarily during the late summer and fall season when the number of eggs is an effective brake on the maximum number produced. Only producers who have standing orders with hatcheries can be sure of obtaining chicks in the short season.

Table 14 shows that about one third of the hatcheries reported hatching eggs to be scarce (at current prices) in the late summer and fall quarters. Most of the hatcheries reported that the supply of eggs was adequate.

Table 13

Hatchability of eggs in Anjou females C43 & heterozygous in California, by quarters, July 1, 1951 to June 30, 1952

[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
		Number		
		2	0	0
		6	1	0
		13	1	2
	13	9	2	4
	0	0	0	0
	6	2	1	1
0	1	0	0	0
	2	2	1	1
	7	15	6	12
	0	0	1	0
	1	1	3	3
	0	1	2	3
	0	0	0	0
	3	5	2	0
	0	1	3	1
	0	0	0	0

2d, and only 2 achieved it in the 1st quarter. Thirteen hatchability had only 65 per cent hatchability in the 1st quarter, whereas practically none below 75 per cent in the 3d and 4th quarters.

Heterozygosity affects the cost of producing chicks and will be discussed below.

c. Availability of hatching eggs.--The number of eggs available for hatching has an influence on the number of chicks hatched. The influence is felt primarily during the late summer and fall season when the number of eggs is an effective break on the maximum number produced. Only producers who have standing orders with hatcheries can be sure of obtaining chicks in the short season.

Table 14 shows that about one third of the hatcheries reported hatching eggs to be scarce (at current prices) in the late summer and fall quarters. Most of the hatcheries reported that the supply of eggs was adequate.

Table 14

Adequacy of Hatching Egg Supply in Major Broiler Chick Hatcheries in California, by Size of Hatchery, by Quarters, July 1, 1951 to June 30, 1952

Annual Average Broiler Chicks Hatched Per Week (000)	Quarters											
	July - Sept			Oct - Dec			Jan - Mar			Apr - June		
	Surplus	Adequate	Scarce	Surplus	Adequate	Scarce	Surplus	Adequate	Scarce	Surplus	Adequate	Scarce
	(Number of hatcheries)											
0- 4.9	0	11	2	0	11	2	3	9	1	1	11	1
5- 7.9	0	4	3	1	5	1	1	6	0	1	5	1
8-14.9	1	9	8	0	9	9	1	12	5	0	12	6
15-29.9	0	3	3	0	3	3	0	6	0	0	6	0
30-49.9	0	5	5	2	5	3	2	6	2	2	6	2
Over 50	1	2	1	1	3	0	1	3	0	0	4	0
Total	2	34	22	4	36	18	8	42	8	4	44	10

Information not available from 2 hatcheries.

There was a definite increase in the number reporting egg surplus situations in the winter and spring quarters. The presence of adequate supplies was reported by a larger number in the spring than in the fall quarter. The relation between supplies of hatching eggs and output of broiler chicks is thus clear--when more eggs are available, more chicks are hatched.

The larger hatcheries (those with output over 50,000 per week) reported less variation in their egg supplies (fewer shortages and surpluses) than did the smaller hatcheries. This fact appears to be related to the prevalence of integration of hatching egg production by the larger hatcheries. This integration permits greater stability in operations than others, and better opportunity to plan the egg supply well in advance so that it will be adequate for their expectations.

d. Sources of hatching eggs.--California broiler chick hatcheries obtained their hatching eggs from three major sources: their own breeding flocks, local breeding flocks, and out-of-state flocks. Some eggs were purchased occasionally from other hatcheries. The source of hatching eggs

Table 32

Adequacy of Hatching Egg Supply in Major Broiler Which Hatchers in Delivering, by Size of Hatchery, by Quarters, July 1, 1951 to June 30, 1952

Size of Hatchery (Eggs Set)	Total	July - Sept.			Oct. - Dec.			Jan. - Mar.			April - June		
		Adequate	Inadequate		Adequate	Inadequate		Adequate	Inadequate		Adequate	Inadequate	
			Number	Percent		Number	Percent		Number	Percent		Number	Percent
0- 4.9													
5- 9.9													
Over 50													

There was a definite increase in the number reporting egg storing closets in the winter and spring quarters. The presence of adequate supplies was reported by a larger number in the spring than in the fall quarter. This relation may mean supplies of hatching eggs and output of broilers during the thus closer--when more eggs are available, more chicks are hatched.

The larger hatcheries (those with output over 50,000 per week) reported less variation in their egg supplies (fewer shortages and surpluses) than did the smaller hatch ries. This fact appears to be related to the prevalence of integration of hatching egg production by the larger [illegible]. [illegible] chicks, and better opportunity to plan the egg supply well in advance so that it will be adequate for their operations.

affects hatchery production policy through its influence on the method of paying for eggs.

Table 15 shows the distribution of hatcheries in the survey according to the source of hatching egg supply. Sixteen hatcheries obtained all their eggs from their own flocks, whereas 41 purchased their entire supply from other sources through a written or oral agreement. The importance of making arrangements in advance for a supply of hatching eggs rather than letting such a matter be left to chance is emphasized here. Only 1 or 2 of the 60 hatcheries bought eggs from sources other than those with whom they had made arrangements.

The 16 hatcheries having their own supply of hatching eggs were not found in one size group. They were distributed among all sizes.

About 25 of the 41 hatcheries which bought their eggs obtained part of them from out-of-state sources.

The source of hatching eggs has an indirect influence on hatchery output policy through the manner of paying for the eggs. A different influence on output policy is expected when the hatchery pays cash for hatching eggs produced by another firm as compared to the non-cash method of acquisition from the hatchery's own flocks. This is discussed below (hatchery price policy).

Disposition of Broiler Chicks.—The several outlets to which broiler chick hatcheries disposed of their production were studied in order to get a clearer picture of output policy. The outlets used were: sales to regular purchasers (advance orders), sales to on-the-spot purchasers (walk-in orders) at the going price, sales at "special" (reduced) prices, unsold and raised with equipment owned by the hatchery, and destroyed.

Table 16 shows the difference in advance-order sales among hatcheries of different size in the four quarters of the year of the survey. It shows that there was a striking relation between size of hatchery and proportion of sales on advance order. The largest hatcheries sold virtually all (93 to 98 per cent) of their output on advance orders. The smaller the hatchery, the smaller proportion of its output was sold in advance of setting the eggs. The smallest hatcheries sold about 70 to 75 per cent of their chicks in advance.

Table 15

Arrangements for Purchasing Hatching Eggs for Major Broiler Chick Hatcheries in California, by Quarters, July 1, 1951 to June 30, 1952

Percent Purchased	Oral or Written Agreement				Purchased from "Walk-in" Offerings				Purchased from Out-of-State Sources			
	Quarters				Quarters				Quarters			
	1	2	3	4	1	2	3	4	1	2	3	4
	(Number of hatcheries)											
0	16	16	16	16	58	58	58	59	33	32	33	34
1 - 5	0	0	0	0	0	1	0	0	3	3	3	3
6 - 10	0	0	0	0	0	0	0	0	2	2	3	2
11 - 25	0	0	0	0	0	0	1	0	5	5	4	4
26 - 50	2	2	2	2	1	0	0	0	4	4	5	5
51 - 75	0	0	0	0	0	0	0	0	5	4	4	3
76 - 90	0	0	0	0	0	0	0	0	2	2	2	2
91 - 99	0	0	0	0	0	0	0	0	1	1	1	1
100	41	41	41	41	0	0	0	0	3	5	3	4

Table 16

Disposition of Broiler Chicks by Major Broiler Chick Hatcheries in California, by Size of Hatchery, by Quarters July 1, 1951 to June 30, 1952

Annual Average Broiler Chicks Hatched Per Week (000)	Broiler Chicks Sold on Advance Orders			
	July - Sept	Oct - Dec	Jan - Mar	Apr - June
	(Per cent of total)			
0 - 4.9	74.8	72.1	70.9	72.6
5 - 7.9	97.5	87.8	87.8	92.0
8 - 14.9	76.2	77.9	71.2	76.6
15 - 29.9	98.1	97.9	96.3	96.9
30 - 49.9	92.7	91.9	89.1	90.3
Over 50	97.5	97.7	93.2	95.0

0	16	16	16	16	58	58	59	33	33	34
1 – 5	0	0	0	3	0	1	0	0	3	3	3
6 – 10	0	0	0	0	0	0	0	0	2	2	2
11 – 25	0	0	0	2	0	0	1	0	5	4	4
26 – 50	2	2	2	2	1	0	0	0	4	4	5	5
76 – 90	0	0	0	0	0	0	0	0	2	2	2	2
91 – 99	0	0	0	0	0	0	0	0	1	1	1	1
Over 100	11	11	11	11	0	0	0	0	3	3	3	4

5 – 7.9	74.3	87.8	87.8	92.0
8 – 14.9	76.2	77.9	72.2	76.0
15 – 29.9	78.1	87.9	86.3	90.9
Over 50	72.5	87.7	92.2	95.0

The proportion of chicks sold as advance orders did not change appreciably in the different quarters of the year. Hatcheries of all sizes experienced lowest advance-order sales in the January-March quarter, but the decrease from the preceding and following months was slight. Differences because of size of hatchery were more important than differences between quarters of the year.

The proportion of chicks sold in advance is to some extent a measure of the degree of assurance of the market available at the time of setting. This can also be interpreted as the degree of risk taken in setting a given number of eggs. The larger hatcheries in California assumed less risk in marketing their chicks than did the smaller hatcheries. This is partly because the larger hatcheries sold mainly to larger producers who cannot get chicks if they allow the chick buying decision to wait until each flock is sold. Therefore, the larger hatcheries appear to have found the more stable market outlet--those producers who are willing to take the risk of ordering another flock of chicks when the prospective price situation is unknown.

About half of the major broiler chick hatcheries in California sold a portion of their output to producers who ordered chicks after the eggs have been set. These sales were called "walk-in" sales. Changes in market conditions and the outlook for broilers change the proportion of sales going to this outlet. California hatcheries were rather successful in the year of the study in predicting and adjusting to changes in the outlook for broilers as reflected in the demand expressed by producers for chicks. This is shown in tables 17 and 18, which show that the hatcheries were able to dispose satisfactorily of most of the chicks they produced. Practically none were reported destroyed because of no market during the year studied. Only a few thousand were raised with equipment on the hatchery's property and most of them during the weakest quarter. A few thousand were sold at a special or reduced price. The major adjustment took place between advance and current orders.

The supply of hatching eggs, the output of chicks, and the number of chicks sold at special prices were all greatest during the January-March quarter. It is probably the overset policy, the willingness to assume that more will be bought in this quarter than in others, which created the surplus problem in the spring.

Table 17

Disposition of Broiler Chicks by Major Broiler Chick Hatcheries in California, by Size of Hatchery, by Quarters, July 1, 1951 to June 30, 1952

Annual Average Broiler Chicks Hatched Per Week (000)	Broiler Chicks Sold to "Walk-in" Trade at "Going Price"			
	July - Sept	Oct - Dec	Jan - Mar	Apr - June
		(Per cent of total)		
0 - 4.9	16.1	15.3	18.0	17.3
5 - 7.9	2.5	2.7	7.9	8.0
8 - 14.9	20.0	18.2	21.4	21.0
15 - 29.9	1.6	1.2	2.5	2.7
30 - 49.9	5.5	6.4	9.1	8.6
Over 50	2.5	2.3	4.8	4.9

Table 37

Disposition of Broiler Chicks by Major Broiler Chick Producers in California, by Size of Hatchery, by Quarters, July 1, 1951 to June 30, 1952

Hatchery Size (000)				
0 - 4.9	16.1	15.0	18.0	17.3
5 - 7.9	2.5	2.7	7.9	7.0
8 - 14.9	29.0	14.2	21.4	21.7
15 - 29.9	1.4	1.2	2.5	2.1
30 - 49.9	5.5	6.4	9.1	8.6
50 - 99	4	4	4	4.9

Table 18

Disposition of Broiler Chicks by Major Broiler Chick Hatcheries in California, by Size of Hatchery, July 1, 1951 to June 30, 1952

Annual Average Broiler Chicks Per Week (000)	Quarters											
	July - Sept			Oct - Dec			Jan - Mar			Apr - June		
	Sold at Special Price	Raised by Hatch-eries	De-stroyed	Sold at Special Price	Raised by Hatch-eries	De-stroyed	Sold at Special Price	Raised by Hatch-eries	De-stroyed	Sold at Special Price	Raised by Hatch-eries	De-stroyed
	(Per cent of total hatched)											
0 - 4.9	.9	8.3	0	.9	11.7	0	1.2	10.0	0	1.2	8.9	0
5 - 7.9	0	0	0	5.4	4.2	0	1.3	1.6	1.5	0	0	0
8 - 14.9	1.5	2.3	.03	1.3	2.6	.03	1.3	5.9	.3	.5	1.6	.5
15 - 29.9	0	.4	0	.5	.3	0	.8	.3	0	0	.4	0
30 - 49.9	0	1.7	.1	.08	1.7	.04	.02	1.1	.6	.01	1.1	0
Over 50	0	0	0	0	0	0	0	0	2.0	.07	0	.08

6.5 – 5	0	0	0	5.1	4.3	0	3.5	9.1	3.2	0	0	0
5 – 4.5	6.	8.3	0	6.	17.2	0	2.1	15.0	0	2.5	6.3	0

The relatively small number of chicks reported sold at "special" prices is worthy of notice. In the July-September quarter only 4 hatcheries reported any sales at special prices; in the October-December quarter there were 7; in the January-March quarter there were 4; and in the last quarter there were 4.

In contrast to this, the number of hatcheries which reported chicks raised with their own equipment fluctuated sharply. In the 1st quarter 11 hatcheries raised some chicks; in the 2d quarter 14 raised some; in the 3d, 21; and in the 4th, 15. These figures show the disposition of chicks in periods of surplus production. Of the 21 hatcheries which raised some chicks in the 3d quarter, none reported any chicks sold at a special price. This indicates that the hatcheries which have facilities would prefer to raise surplus chicks themselves than sell them at a reduced price. All the hatcheries which reported some chicks destroyed in the 3d quarter also showed that they raised some with their own equipment. This indicates that they destroyed only the number which exceeded their own growing capacity. This topic is closely related to price policy and will be discussed more thoroughly under that heading.

Adjustments in Disposition of Chicks.--Cancellation of orders for chicks for which eggs are set is among the most vexing hatchery problems. Hatcheries attempt to meet it in a number of ways. They are reluctant to take disciplinary action against producers who cancel orders even when the cancellation puts a serious burden and risk on the hatchery. Conditions beyond the control of producers, such as illness in the family or breakdown of equipment, frequently cause cancellation or postponement of orders. Hatcheries consider this a normal risk and attempt to adjust to it. It is the cancellations caused by a change in economic outlook which cause the most trouble. These cancellations have a tendency to snowball, and they shift the risk from the producer to the hatchery.

Most hatcheries in California attempted to make chick orders as firm and binding as possible. Table 19 shows the different methods which were used to help insure that an order for chicks meant more to the producer than an idle statement. About half the hatcheries reported that they considered orders for chicks as "not binding"--that if producers decided to cancel,

The relatively small number of chicks reported sold at "special" prices is worthy of notice. In the July-September quarter only 4 hatcheries were 7; in the January-March quarter there were 14; and in the last quarter there were 4.

In contrast to this, the number of hatcheries which reported chicks raised with their own equipment fluctuated sharply. In the 1st quarter 11 hatcheries raised some chicks; in the 2d quarter 11 raised some; in the 3d, 21; and in the 4th, 15. These figures show the disposition of chicks in periods of surplus production. Of the 21 hatcheries which raised some chicks in the 3d quarter, none reported any chicks sold at a special price. This indicates that the hatcheries which have facilities would prefer to raise surplus chicks there than sell them at a reduced price. All the hatcheries which reported some chicks destroyed in the 3d quarter also showed that they raised some with their own equipment. This indicates that they destroyed only the number which exceeded their own growing capacity. This topic is closely related to price policy and will be discussed more

Adjustments in Disposition of Chicks.--Cancellation of orders for chicks for which there is not is among the most vexing hatchery problems. Hatcheries refuse to count it in a number of ways. They are reluctant to ask direct library action against producers who cancel orders even when the cancellation puts a serious burden and risk on the hatchery. Conditions beyond the control of producers, such as illness in the family or breakdown of equipment, frequently cause cancellation or postponement of orders. Hatcheries consider this a normal risk and attempt to adjust to it. It is the cancellations caused by a change in economic outlook which cause the most trouble. These cancellations have a tendency to snowball, and they shift a risk from the producer to the hatchery.

Most hatcheries in California attempted to make check orders as final and binding as possible. Table 19 shows the different methods which were used to help insure that an order for chicks would not be a light one to the producer when it came time for chicks to "not binding"--that if producers decided to cancel,

Table 19

Conditions for Accepting Chick Orders by Major Broiler Chick Hatcheries in California July 1, 1951 to June 30, 1952

Conditions	Occurrence
Signed contract	1
Try to book on 13-week basis	1
Require 30-day notice before cancelled	4
Deposit required: All	4
Only new customers	6
Only small producers	1
No reason given for orders being binding	11
Orders not binding	32

there was practically nothing they could do about it. They attempted to screen orders in such a way to refuse the most risky ones.

Only 1 of the 60 hatcheries required producers to sign a contract when placing an order. Six hatcheries of various sizes required a deposit when accepting an order for chicks from new customers. Four required a deposit from all producers. All hatcherymen expressed the wish that there were some way of making orders more binding. This is in effect an expression of dissatisfaction with the amount of risk which they were required to bear but which they could not easily avoid.

The large proportion of hatcheries which reported chick orders as "not binding" is undoubtedly a reflection of an element of competition in the selling of chicks. One hatchery cannot usually demand a deposit, or other binding conditions, if the majority of hatcheries do not demand it.

The significance of this large proportion of orders taken as "not binding" on the producer is that it permits the more transitory and less commercialized producer to place orders freely. There is less restraint placed on his action than if he had to make a deposit. The freedom makes hatchery output more unstable than it would be otherwise. The less commercialized producer is more likely to be influenced by short-time factors and current prices than by long-run considerations.

Week Ending Saturday, October 19, 1968

Days to be Lost in Labor Disputes	31
Lost-Time Injury Rate (Per Million Man-Hours Worked)	4.1
Persons Injured	41
Fatalities	0
Permanent Disabilities	1
Persons Involved in Non-Industry Motor Vehicle Accidents	12
Fatalities	3

When questioned about the policy followed in adjusting to cancellations of orders, about three quarters (46) of the hatcheries said they attempted to place the chicks with another producer--either by shifting orders forward or backward slightly, or by inducing producers to increase their orders. When these opportunities were exhausted, the chicks were either sold at a discount price in order to induce some producer to take them, or they were grown by the hatchery, or destroyed.

The remainder of the hatcheries stated that it was their policy not to shift orders forward or backward. This policy grew out of the nature of their business. It was their policy to set eggs only on order to cater mainly to those producers whose business was relatively stable.

HATCHERY PRICE POLICY

Price policy refers to those "general principles and rules, if any, that are employed by a firm in making price decisions."16/ A study of price and sales policies of California broiler hatcheries is essential to understanding the role of hatcheries in the growth and output pattern of the broiler industry.

Prices Received.--In general California broiler hatcheries charged a stable price for broiler chicks during the year of the study, and adjusted their output to the amount which they could dispose of at that price level. In view of differences in cost of production of chicks in different seasons of the year, this stability suggests a degree of control over prices more common among industrial organizations than among farms. In addition to this stability over time, there were many differences in prices at one time. Differences related to breed of chick, to size of hatchery, to output policy, to conditions of sale, and to other factors are discussed below.

No differences in prices were reported because of differences in quality of chicks. Hatcheries quoted only one price for each breed--a No. 1 quality bird.

16/ National Bureau of Economic Research. Cost Behavior and Price Policy. p. 282, New York, 1943.

[10] National Bureau of Economic Research. [illegible]
[illegible], p. 502, New York, 1943.

a. Prices by breeds.--It was shown previously that about 98 per cent of the total broiler output was concentrated in four main breeds and strains of chickens. Prices charged for these, as well as other minor breeds, during the year of the survey are shown in table 20. Differences in price because of breed were not great. Prices for the crossbreeds (Vantress and Cornish crosses) averaged about one-half cent per bird higher than for the New Hampshires or the other standard breeds. The price differentials among breeds were maintained at about the same level throughout the year.

Table 20

Prices for Broiler Chicks in Major Broiler Chick Hatcheries in California, by Breeds and Strains, Retail and Wholesale, July 1, 1951 to June 30, 1952

Price	Breeds and Strains							
	New Hampshire	Cornish Cross	Vantress	Parmenter Reds	New Hampshire Reds	Red x White	New Hampshire Nichols	Rock Hampshire Cross
	(Weighted Average Price -- $ per 100)							
Retail	17.9	18.5	18.5	20.3	18.0	19.0	18.5	18.8
Wholesale	16.7	16.9	*	*	*	*	*	16.8
Combined	17.7	18.2	18.5	20.3	18.0	19.0	18.5	17.8

* No price reported.

b. Prices by seasons.--The most striking characteristic of chick prices during the year was their uniformity over time. Thirty-three of the 60 hatcheries quoted the same price in each quarter of the year. This is striking in view of the flexibility of broiler prices, egg prices, hatching egg prices, and other agricultural prices. Broiler chick prices appear to fit into the category of inflexible prices of the same type as many other items of cost to farmers. Part of this inflexibility is related to the low elasticity of demand for baby chicks. Changes in the price of chicks are not closely related to changes in the number of chicks bought because the cost of chicks is a small proportion of the cost of producing a mature broiler.

b. Prices by brands.—It was shown previously that about 98 per cent of the total broiler output was concentrated in four main brands and strains of chickens. Prices charged for these, as well as other makes produced during the year of the survey are shown in Table 20. Differences in price between brands were not great. Prices for the crossbreeds (V strips and Cornish crosses) averaged about one-half cent per kind higher than for the New Hampshires or the other standard breeds. The price differential among brands were maintained at about the same level throughout the year.

Table 20

Prices for Broiler Chicks in Major Broiler Chick Hatcheries in California, by Breeds and Strains, Month and Weekly, July 1, 1951 to June 30, 1952

Item	Year							
Price*	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

* As price reported.

b. Prices by strains.—The most striking characteristic of broiler prices during the year was their uniformity over time. Thirty-three of 52 individual pairs of the same price in each quarter of the year. This is striking in view of the flexibility of broiler prices, egg prices, hatching of pullets, and other agricultural prices. Broiler chick prices do not enter into the category of inflexible prices of the sort type as many other items of cost to farmers. Part of this inflexibility is related to the inability of farms for baby chicks. Changes in the price of chicks are not directly related to changes in the number of chicks coming on the market of chicks is a small proportion of the cost of producing a broiler.

Table 21 shows that the average quoted price[17] for all chicks dropped from one-half cent to one cent per bird in the spring and summer quarters as compared to the other quarters. The lower price came about through the actions of the relatively few hatcheries which quoted a different price in some quarters of the year. In general, the larger hatcheries dropped their prices more than others during the spring and summer quarters.

The stability of broiler chick prices in California is in contrast to that in Del-Mar-Va where seasonality of egg prices strongly influences the price of chicks. The seasonal variation in chick prices in Del-Mar-Va during the years 1947-1950 varied from 3 to 5 cents per chick. During this period 78 per cent of the variance in chick prices was associated with variations in egg prices one month earlier.[18]

c. Prices by size of hatchery.--The differences in price of chicks associated with size of hatchery must be interpreted with care. Table 21 shows that the smaller hatcheries had slightly higher average prices than the larger hatcheries. Part of this difference is related to the fact that the larger hatcheries concentrated on the more popular breeds whereas the less popular breeds were carried sometimes by only one small hatchery. When a comparison of prices by size of hatchery is made for only the four most popular breeds, the differences disappear. Prices of these chicks were nearly uniform among hatcheries of all sizes.

d. Prices with and without credit[19].--The practice of selling broiler chicks on credit is widespread in California. Credit for buying broiler chicks is extended to producers in several ways: (1) direct credit extended by the hatchery to the producer, (2) the integrated system in which the hatchery retains ownership of the chicks and the flock and extends credit

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17/ The quoted price is the regular or the "going" price charged for chicks. These figures do not take into account the small quantity shown previously (table 18) as sold at a "special" price.

18/ Brandow, G. E., E. W. Learn and R. L. Baker. Broiler Production and Price Relationships. Pennsylvania State College Progress Report No. 73: pp. 12-13. May 1953.

19/ The granting of credit is defined here to mean that payment for the chicks was deferred until the mature flock is sold and cash is received. Payment within thirty days was considered as cash payment.

Table 21

Price for All Breeds of Broiler Chicks, by Size of Hatchery, by Quarters, in Major Broiler Chick Hatcheries in California, July 1, 1951 to June 30, 1952

Annual Average Broiler Chicks Hatched Per Week (000)	Quarters			
	July - Sept	Oct - Dec	Jan - Mar	Apr - June
	(Weighted average price - $ per 100)			
0 - 4.9	18.1	18.1	18.1	18.3
5 - 7.9	18.5	18.5	18.1	18.0
8 - 14.9	18.3	18.4	17.9	18.0
15 - 29.9	18.0	18.1	17.1	17.2
30 - 49.9	18.3	18.1	17.2	17.2
Over 50	17.8	17.1	17.2	17.2

for all operating expenses, (3) joint financing between the hatchery and the feed dealer in which the hatchery gets a second mortgage, or (4) direct financing for feed and chicks from the feed dealer.

In the first three methods, the hatchery itself enters into the financing arrangement and has a responsibility for the production process to the extent it wishes to safeguard its investment. In the last method the hatchery has no direct financing function because it sells for cash to another agency. It is estimated that about one half of all broiler chicks sold in this period were financed by one or more of these methods mentioned, of which 13 per cent were financed directly by hatcheries.20/

Table 22 classifies broiler hatcheries according to their credit practices during the year of the study. In addition it shows how many hatcheries sold direct to or through other financing agencies (usually feed dealers) to producers, for cash or credit. Nearly half of the hatcheries,

- - - -

Table 22

Price for All Breeds of Broiler Chicks, by Size of Hatchery, by Quarters, in Major Broiler Chick Hatcheries in California, July 1, 1951 to June 30, 1952

sold no chicks on credit during this period. The remainder of the hatcheries offered some credit, with only a few selling over 50 per cent of their chicks in this fashion.

Table 22

Sales of Broiler Chicks from Major Broiler Chick Hatcheries in California Sold on Credit by Per Cent of Chicks Sold to or Financed through Other Agencies, July 1, 1951 to June 30, 1952

Per Cent Sold to or Financed Thru Other Agencies (Annual Average)	Per Cent Sold on Credit						
	0	1 - 25	26 - 50	51 - 75	76 - 90	91 - 100	Total
	(Number of hatcheries)						
0	15	4	3	1			23
1 - 25	2	6	3		1		12
26 - 50	6	1	5				12
51 - 75	2	3	1				6
76 -100	3	0	2			2	7
Total	28	14	14	1	1	2	60

Of the 28 hatcheries which did not have any credit sales during the year, 15 sold their entire output direct to producers. Eight other hatcheries sold only direct to producers with differing proportions of their output covered by credit. Only one of this group selling only to producers had over 50 per cent of its sales on credit.

Of the 28 hatcheries which had only cash sales, 13 sold some or all of their output to other agencies, mainly feed dealers. Some of the 13 had a small proportion and some sold nearly all their chicks to other agencies.

Table 23 shows the distribution of different types of sales of broiler chicks according to size of hatcheries. Credit sales to producers are the type in which the hatchery carries the credit. Cash sales to financing agencies are those in which the producer gets his chicks on credit but the hatchery is paid cash by someone. It shows that the smallest and the largest size hatcheries sold only small amounts on credit to producers. About

Table 22

Period on Credit by Fur Dept. of Outside Skin Trade

July 1, 1922 to June 30, 1923

Time Period (Days)	0	1 - 15	16 - 30	31 - 45	46 - 60	Over 60	Misc.
0	45						
1 - 25	2	6					
26 - 50	6	2					
51 - 75	2	1					
76 - 100	3	0					7
Total	58	15					00

one quarter of the total output of the medium sized hatcheries was sold on credit to producers.

Table 23

Cash Sales of Broiler Chicks to Financing Agencies and Credit Sales to Producers, by Major Broiler Chick Hatcheries in California, July 1, 1951 to June 30, 1952

Annual Average Output Per Week (000)	Credit Sales to Producers	Cash Sales to Financing Agencies
	(Per cent of total output)	
0 - 4.9	6.1	10.8
5 - 7.9	15.0	18.7
8 - 14.9	27.3	28.6
15 - 29.9	20.3	43.8
30 - 49.9	27.3	40.1
Over 50	2.9	39.2

It was stated previously that approximately 13 per cent of the broiler chicks sold were financed directly by the hatcheries to producers. Table 24 shows the relation between credit sales and advance order business of the hatcheries. It shows whether the credit risk was added to the sales risk as measured by per cent of chicks sold on advance orders. All the hatcheries which sold over 50 per cent of their output on credit sold a high proportion of their output by advance orders. In general, these were the larger hatcheries. It may be that the lower risk taken by the larger hatcheries in selling their output permits them to assume a greater risk in getting paid for their chicks. The smaller hatcheries have lower financing resources and have to sell for cash in order to keep in business.

It is difficult to determine whether the hatcheries granting credit charged more for chicks than those not granting credit. Seasonal, breed, and size of hatchery differences seem to obscure differences related to credit. Many hatcheries reported the same price for chicks whether with or without credit. If there is a cost for credit, it is tied up in other factors and difficult to separate from them. (Appendix table 33).

one quarter of the total output of the medium sized bakeries was sold on credit to purchasers.

Cash Sales of Broiler Chicks to Financing Agencies and Credit Sales to Producers, by Major Broiler Chick Hatcheries in California, July 1, 1951 to June 30, 1952

[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]

It was stated previously that approximately 13 per cent of the broiler chicks sold were financed directly by the hatcheries to producers. Table 23 shows the relation between credit sales and advance order bookings of the hatcheries. It shows whether the credit risk was added to the sale risk as covered by purchase of chicks sold on advance orders. All the hatcheries sold over 50 per cent of their output on credit sold a high proportion of their output by advance orders. In general, those were the larger hatcheries. It may be that the lower risk taken by the larger hatcheries in selling their output permits them to assume a greater risk in credit sold for broiler chicks. The smaller hatcheries have fewer financial resources and may be small for cash in order to keep in business.

It is difficult to determine whether the hatcheries granting credit [illegible] and area of material difference seem to observe differences related to credit. Many hatcheries reported the same price for clients whether with or without credit. If there is a cost for credit, it is tied up in the returns and difficult to separate from them. (Appendix table 33).

Table 24

Credit Sales of Broiler Chicks from Major Broiler Chick Hatcheries in California, by Percent Sold on Advance Orders, July 1, 1951 to June 30, 1952

Per Cent Sales on Advance Orders (Annual Average)	Per Cent Sold on Credit						
	0	1 - 25	26 - 50	51 - 75	76 - 90	91 - 100	Total
	(Number of hatcheries)						
1 - 50	5	1	0				6
51 - 75	6	3	2				11
76 - 90	11	5	3		1		20
91 - 100	6	5	9	1		2	23
Total	28	14	14	1	1	2	60

The significance of the credit practices of hatcheries for fluctuations in broiler output is not perfectly clear. These credit practices are tied up closely with the role of the feed dealer in his capacity of purchaser of broiler chicks, as promoter of broiler chick production, and in his capacity as promoter of markets and processing facilities for the broilers after they are produced. These activities could have an influence toward getting more producers into the field than are equipped technically and financially for it. On the other hand, such activities tend to encourage and promote more vertical integration in the industry (concentration of decision making for two or more activities in one manager). It has been argued that vertical integration leads to greater stability of output. This may be one of the reasons for the greater stability of placements in California as compared to other areas.

Hatcheries cannot be expected to control fluctuations in output of broilers when they sell for cash only. However when they sell on credit, they get into the production field and assume a responsibility for production in order to safeguard their investment. Credit, therefore, is the key factor which links hatcheries, feed dealers, and processors in their collective influence on output. The influence of hatcheries alone cannot be segregated.

Credit Sales of Broiler Chicks from Major Broiler Chick Hatcheries in California, by Percent Sold on Advance Orders, [illegible]

[illegible]	[illegible]	Per Cent Sold on Credit				
		1 - 25	26 - 50	51 - 75	76 - 90	91 - 100	Total
		(Number of Hatcheries)				
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

The significance of the credit practices of hatcheries for fluctuations in broiler output is not perfectly clear. These credit practices are tied up closely with the role of the feed dealer in his capacity of purchaser of broiler chicks, as promoter of broiler chick production, and in his capacity as promoter of markets and processing facilities for the broilers after they are produced. These activities could have an influence toward getting more producers into the field when are equipped technically and financially for it. On the other hand, such activities tend to encourage and promote more vertical integration in the industry (concentration of decision making for two or more activities in one manager). It has been argued that vertical integration leads to greater stability of output. This may be one of the reasons for the greater stability of placements in California as compared to other areas.

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Cost-Price Relationships in Hatchery Operations.--Studies have shown that about 67 per cent of the cost of producing a broiler chick is the cost of the hatching egg from which it is produced.[21/] No attempt has been made in this study to determine the cost of producing broiler chicks, but certain aspects of cost have been studied because they have a direct bearing on prices charged and price policy generally.

The purchase of hatching eggs on the basis of a fixed premium, in cents per dozen, over the price for market eggs as quoted by some official reporting agency is an accepted custom in the hatchery industry. When the price of market eggs changes, the cost of producing broiler chicks changes also, but by a smaller proportion because of the rigidity of other (labor and capital) costs involved. But the contrast between fluctuating cost of production and the striking stability of chick prices raises this question: What kind of industry structure and relationship between firms and competition exists which creates this situation? What are the economic consequences of having hatching egg prices linked to market egg prices?

a. Prices paid for hatching eggs.--It was shown previously (page 35 and table 15) that California broiler hatcheries obtain their hatching eggs from a few major sources--breeding flocks owned by the hatchery, from local breeding flocks, and from out-of-state breeding flocks. The price paid for hatching eggs and the arrangements for purchasing eggs are slightly different for each of these sources.

The hatcheries which produced some or all their own hatching eggs did not pay a price in the conventional sense for the eggs from their own flocks since the accounting system for the hatchery was not usually separated from that of the producing flock. If the two were separated for the purposes of accounting, no cash changed hands. Only a bookkeeping entry was made to record the indebtedness of one enterprise to another. Hatcheries with their own breeding flocks did not feel the impact of the changing cost of hatching eggs as would those paying cash on the basis of market egg prices. It is estimated that about 30 per cent of the total number of chicks hatched per

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21/ Hartman, R. C. and G. S. Vickers. Hatchery Management. Orange Judd Publishing Co., p. 246, 1950.

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week in California come from hatcheries which obtain their hatching egg supply from their own flocks. The 16 hatcheries in this group which produced all their own hatching eggs were not predominantly large or small in size--they were scattered among all the different size classifications.

In general, the hatcheries which obtained most if not all of their eggs from out-of-state sources paid for them on the basis of a straight price per dozen. There was a total of 26 hatcheries which bought some eggs from out-of-state sources (table 25). They were scattered among the various size classifications of hatchery output and among the various proportions bought out-of-state. Three hatcheries (all in the smallest size group) bought all their eggs from out-of-state.

Table 25

Major Broiler Chick Hatcheries in California Which Purchased Eggs from Out-of-State Sources, by Size of Hatchery, July 1, 1951 to June 30, 1952

Annual Average Output Per Week (000)	Percent Eggs Purchased from Out-of-State Sources							
	0	1 - 10	11 - 25	26 - 50	51 - 75	76 - 99	100	Total
	(Number of hatcheries)							
0 - 4.9	7				3		3	13
5 - 7.9	4	2		1				7
8 - 14.9	9	1	3	2	2	1		18
15 - 29.9	4	1				1		6
30 - 49.9	4	1	1	2	1			9
Over 50	4		1					5
Total	32	5	5	5	6	2	3	58

Ten of the hatcheries in the survey paid for their hatching eggs on a straight-price per dozen basis throughout the year of the study. They paid from $.90 to $1.09 per dozen, f.o.b. producing ranch, with the majority paying about $1.00, (table 26). This group, too was scattered among the several hatchery size classifications. The effect of the cost of eggs on

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Table 25

[illegible] for Broiler Chick Hatcheries in California Which Purchased Eggs
from Out-of-State Sources, by Size of Hatchery

[illegible]	Percent Eggs Purchased from Out-of-State Sources (Number of Hatcheries)						
	0	1 - 10	11 - 25	26 - 50	51 - 75	76 - 99	100
[illegible]	[illegible]						
[illegible]							
[illegible]							
[illegible]							
[illegible]							
[illegible]							
[illegible]							

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from $.90 to $1.09 per dozen, f.o.b. producing ranch, with the majority
[illegible]

several hatchery size classifications. The effect of the cost of eggs on

the price charged for broiler chicks was nearly the same for these 10 hatcheries as for the 16 which produced their own hatching eggs--there was little fluctuation in the cost of eggs during the season.

Table 26

Prices Paid for Hatching Eggs by Major Broiler Chick Hatcheries in California, by Size of Hatchery, July 1, 1951 to June 30, 1952

Annual Average Output Per Week (000)	Fixed Margin System: Cents over quoted price for grade AA market eggs					Straight Price System: Cents per dozen				Raise Own Eggs
	15-24	25-29	30-34	35-40	Over 40	90-94	95-99	100-104	105-109	
	(Number of hatcheries)									
0 - 4.9			4	2			2	1		6
5 - 7.9			1	4		1		1		1
8 -14.9	1	1	6	4			3	1		4
15 -29.9				3				2	1	1
30 -49.9	1	1	1	1	1		1			4
Over 50	1			2				1		1

Note: Five hatcheries quoted more than one price.

There was no relation between price paid for hatching eggs and the proportion of chicks sold on credit, or between the price paid for eggs and the proportion of chicks sold to feed dealers and other financing agencies (Appendix tables 34 and 35).

The third type of buying practice is that of paying a fixed premium over the price quoted for a certain class of market eggs. Nearly all the 34 hatcheries using this practice paid a premium of 35 cents per dozen (plus or minus 5 cents) (table 26). There was little or no relationship between size of hatchery and premium paid, or between proportion of sales on advance orders and prices paid (Appendix table 36). There were several reasons for the variation in premium paid, the most common being the variation in services performed by the hatchery.

The characteristic of hatching eggs of most interest and value to a hatchery operator is hatchability. In some areas, premiums for hatching eggs

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Table 25

Prices Paid for Hatching Eggs by Major Broiler Chick Hatcheries in California, by Size of Hatchery, July 1, 1951 to June 30, 1952

Price per egg	Hatcheries producing more than 1,000,000 chicks						Hatcheries producing 1,000,000 chicks or less						Hatcheries producing all sizes
	Over 30	25-30	20-25	15-20	10-15	Under 10	Over 30	25-30	20-25	15-20	10-15	Under 10	
Under 2¢													
2 and under 2½¢													
2½ and under 3¢													
3 and under 3½¢													
3½ and under 4¢													
4¢ and over													

Note: Five hatcheries quoted more than one price.

There was no relation between price paid for hatching eggs and the proportion of chicks sold on credit, or between the price paid for eggs and the proportion of chicks sold to feed dealers and other financing agencies (Appendix tables 34 and 35).

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The characteristic of hatching eggs of most interest and value to a hatchery operator is hatchability. In some areas, premiums for hatching eggs

vary according to hatchability.[22/] This is desirable because it reflects the true value, the "chick" value, rather than the eating value of eggs. When priced according to hatchability, the premium over market eggs is usually lower in the spring when hatchability is high and higher in the fall when hatchability is lower.

Another aspect of a buying system based on chick value of eggs would involve price variations in accordance with the supply of eggs (of correct size) and with the demand for broiler chicks. As at present, the price would be higher in the fall because of fewer eggs and lower in the spring because of more eggs. These prices would also be influenced by higher demand for broiler chicks in the spring and lower demand for them in the fall.

The premium paid for hatching eggs over market eggs under the fixed margin system is intended to pay the breeding flock owner for the additional costs involved in producing this product as compared to producing market eggs. Some of these additional costs are: disease control measures (selection of disease resistant strains, vaccination for Pullorum, Newcastle, cholera, trachetis, fowl pox, and others), maintenance of male birds in the flock, flock inspection, grading, holding, and delivery requirements, etc. In addition, the premium covers the cost of varying proportion of fertility of eggs, and the lower returns from lower egg production of the breeding flock as compared to the laying flock.

b. Influence of hatchability on cost of hatching.--A comparison of hatching egg prices, hatchability, and broiler chick prices for the year of the study under two different egg buying practices is shown in table 27. Figure 7 shows the proportion which egg cost was of broiler chick prices for each month under the two systems.

The prices paid for hatching eggs under the two systems were in marked contrast. Hatcheries did not, however, adjust their prices for chicks in accordance with the cost of the major item in the cost of a chick. Under the fixed price arrangement, the proportion the egg cost was of the chick

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22/ Lyon, Gale H. Commercial Chick Hatcheries in South Carolina. South Carolina Agricultural Experiment Station Bul. No. 392, Clemson, pp. 16-18, May 1951.

See also: Roy, Elwell P. and James M. Baker. Commercial Hatcheries in Louisiana. Louisiana Agricultural Experiment Station. DAE Lithographed Circ. No. 140, Baton Rouge, p. 11, August 1952.

Circ. No. 110, Baton Rouge, p. 11, August 1952.

[22] Lyon, G.L. H. Commercial Chick Hatcheries in South Carolina. South Carolina Agricultural Experiment Station Bul. No. 392, Clemson, pp. 15-18, May 1951.

Table 27

Hatching Egg Price, Hatchability, and Broiler Chick Prices, under Two Egg Buying Practices, California Hatcheries, 1951-52

	Fixed Margin Arrangement					
	Hatch-ability	Price per doz. eggs	Egg cost per doz. chicks	Egg cost per 100 chicks	Price chicks	Proportion egg cost was of chicks price
	(percent)	(cents)	(cents)		(per 100)	(percent)
1951						
July	70	96	137	$11.65	$18.00	65
Aug	68	102	150	12.75	18.00	71
Sept	69	105	152	12.92	18.00	71
Oct	70	104	148	12.58	17.80	71
Nov	71	106	149	12.67	17.80	71
Dec	73	95	130	11.05	17.80	62
1952						
Jan	74	84	113	$ 9.61	$17.30	56
Feb	76	79	103	8.75	17.30	51
Mar	78	80	102	8.67	17.30	50
Apr	80	81	101	8.59	17.30	50
May	78	79	101	8.59	17.30	50
June	76	83	109	9.27	17.30	54

	Straight Price Arrangement					
	Hatch-ability	Price per doz. eggs	Egg cost per doz. chicks	Egg cost per 100 chicks	Price chicks	Proportion egg cost was of chicks price
	(percent)	(cents)	(cents)		(per 100)	(percent)
1951						
July	70	95	136	$11.56	$18.00	64
Aug	68	95	140	11.90	18.00	66
Sept	69	95	137	11.65	18.00	65
Oct	70	95	136	11.56	17.80	65
Nov	71	95	134	11.39	17.80	64
Dec	73	95	130	11.05	17.80	62
1952						
Jan	74	95	128	10.88	17.30	63
Feb	76	95	125	10.63	17.30	61
Mar	78	95	122	10.37	17.30	60
Apr	80	95	119	10.11	17.30	58
May	78	95	122	10.37	17.30	60
June	76	95	125	10.63	17.30	61

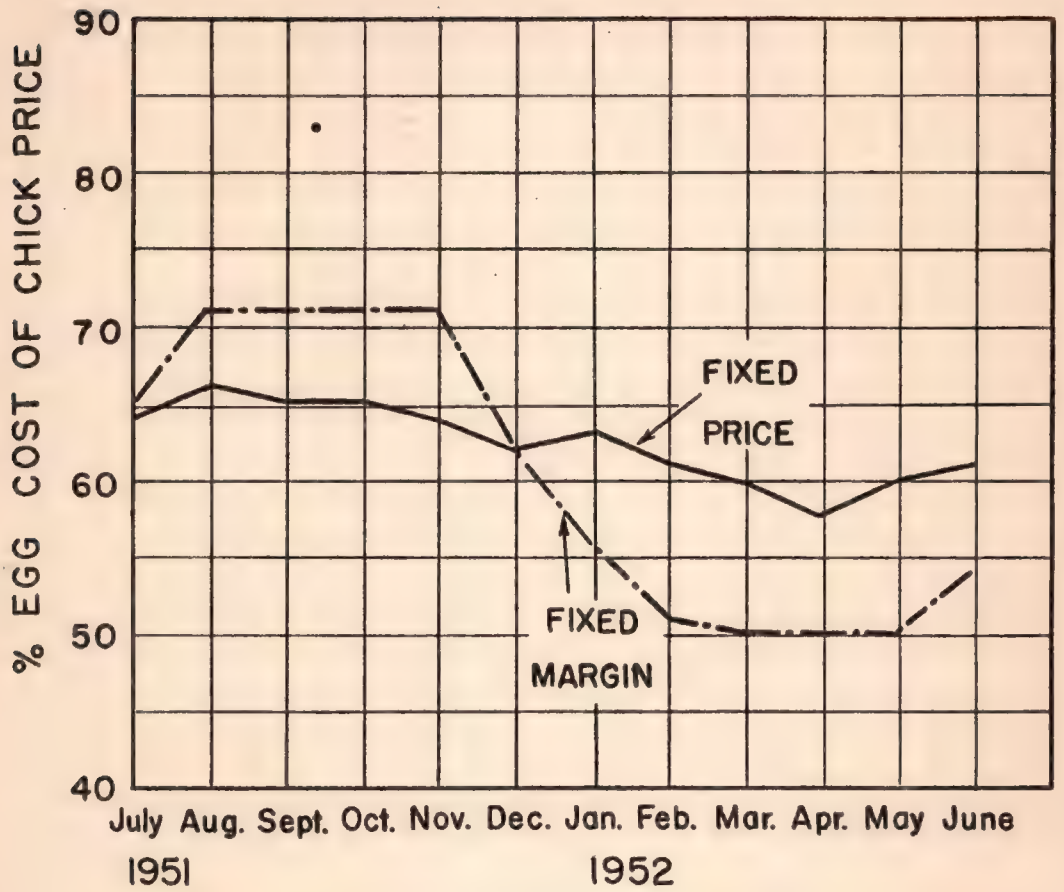

FIGURE 7: PROPORTION WHICH EGG COST WAS OF BROILER CHICK PRICES IN CALIFORNIA BROILER CHICK HATCHERIES UNDER TWO EGG BUYING SYSTEMS, JULY 1, 1951 – JUNE 30, 1952.

SOURCE: TABLE 27.

price varied from 58 to 65 per cent. The major factor in this change was the seasonal change in hatchability. Under the fixed margin arrangement, the proportion of the chick price attributable to egg cost varied from 50 to 71 per cent. The major factor in this change was the change in price of market eggs.

During the summer and fall quarters, those hatcheries buying eggs on the fixed margin arrangement paid more for their eggs and appear to have earned less income for the operator than did other hatcheries. On the other hand, during the winter and spring quarters, the hatcheries which bought eggs on the fixed margin paid less for their eggs and earned more profit for the hatchery than did the hatcheries paying on other systems. In years in which the seasonal price changes in market eggs are "normal," the lower earnings of some hatcheries in the fall must be offset by the higher earnings they make in the spring. Since the spring is the season of high egg production and high demand for broiler chicks, there would be a stronger incentive to overset eggs in the spring in order to maximize earnings in the high earning period.

c. Significance of fluctuating costs.--These data illustrate the greater risk under which some hatcheries operate than others. During years when market eggs fall to unusually low prices, hatcheries buying on the fixed margin arrangement may be jeopardizing their source of supply because the producers selling at less than cost of production may be forced out of business. On the other hand, these same hatcheries may be jeopardizing their income during periods when market egg prices rise to unusually high levels. In any year in which fluctuations in market egg prices are not "normal" or are predicted inaccurately, those hatcheries buying eggs on the fixed margin system incur an unnecessary risk.

The producers who sell broiler hatching eggs on the basis of market egg prices are subject to greater risks than those who sell on other arrangements. They cannot adjust production upward or downward as prices change in the same manner as market egg producers.

The existence side by side of these two different egg buying practices and the contrast in them for the cost-price relationship in hatchery operation indicates something about the competition existing in the broiler hatching industry. It indicates first that price competition in the selling

of chicks is not keen.[23/] The contrast between the inflexibility of prices for broiler chicks and the flexibility of egg costs for the 34 hatcheries paying variable prices indicates that costs were not closely related to prices during the period under study. It indicates that there was insufficient price competition to force prices down to cost of production in each month.

In many industries, a system of stable prices and fluctuating costs or stable prices and stable costs leads to instability in output because changes in demand must be reflected in changes in output rather than price. However, it is not clear that that relationship holds in the hatchery industry. The fact of stable prices and relatively stable output in California and unstable prices and unstable output in Del-Mar-Va should be noticed. It is not clear that these relations represent cause and effect.

The price of market eggs is not a good measure of the value of hatching eggs primarily because the supply-demand forces for each are not the same. The greater efficiency of the Leghorn breed hens as egg producers as compared to the "meat breeds" puts them into a separate class. This is an element in the cost of production. Flocks of meat breed hens cannot be maintained at a profit at the same egg prices on which Leghorn flocks can be maintained. Another factor in the supply of each is the difficulty that hatching egg producers have in expanding or contracting their output as compared to market egg producers. On the demand side, the value of market eggs is related to consumer income, seasonal and temperature changes. The value of hatching eggs is derived from the demand for broilers, rather than from their own intrinsic properties.

Payment for hatching eggs on the fixed margin system increases the risk to the hatcheryman, increases the price risk to the producer of hatching eggs, and promotes the integration of hatcheries with hatching egg production. Inflexible broiler chick prices tend to shift more price risk to broiler producers in that changes in demand for chicks are met by changes in output. These changes in output create changes in price which affect producers adversely.

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23/ The willingness of hatcheries to grow surplus chicks or destroy them rather than sell them at reduced prices was noted previously (page 40).

of chicken is noteworthy.[2/] The contrast between the inelastic price
[illegible]
period variable prices indicates that cattle were not closely related to
prices during the period under study. It indicates that there was insufficient
price competition to force prices down to cost of production in each month.

In many industries, a system of stable prices and fluctuating costs or
stable prices and stable costs leads to instability in output because changes
in demand must be reflected in changes in output rather than price. Hence, it
is not clear that relationship holds in the meatpacking industry. The
fact of stable prices and relatively stable output in California and unstable
prices and unstable output in D.C.-Md.-Va should be noticed. It is not clear
[illegible]

The price of market eggs is not a good measure of the value of hatching
eggs primarily because the supply-demand forces for each are not the same.
The amateur efficiency of the Leghorn breed make as any producers as compared
to the "meat breeds" puts them into a separate class. This is an element in
the cost of production. Flocks of meat breed hens cannot be maintained at a
profit at the same egg prices on which Leghorn flocks can be maintained.
Another factor in the supply of each is the difficulty that hatching egg
producers have in expanding or contracting their output as compared to market
egg producers. On the demand side, the value of market eggs is related to
consumer income, seasonal and temperature changes. The value of hatching
eggs is derived from the demand for broilers, rather than from their own
[illegible]

Payment for hatching eggs on the fixed margin system increases the risk
to the hatcherman, increases the price risk to the producer of hatching eggs,
and promotes the integration of hatcheries with hatching egg production.
Individual broiler chick prices tend to shift more price risk to broiler
producers in that changes in demand for chicks are met by changes in output.
These changes in output cause changes in price which affect producers
[illegible]

[2/] The willingness of hatcheries to grow surplus chicks or destroy
[illegible]

Influence of Variable Costs on Price Policy.--The hatchery industry is one characterized by having a large proportion of its costs of operation as variable costs--those in direct ratio to the amount produced. The most important variable cost is the egg cost of the chick. Other variable costs are supplies, unskilled labor, water and electricity, and delivery charges. Fixed costs--those which must be met whether the hatchery operates or not--include depreciation charges on the capital investment, office expense, skilled labor, insurance, rent, etc.

Studies in other areas have shown that variable costs make up about 85 per cent of the total cost of hatchery operation.[24/] Although no detailed cost records were obtained for this study, many of the cooperating hatcheries confirmed this ratio of variable to total costs for their business.

The relation between a high proportion of variable costs and stability of prices or output is not clear. It can be argued that this situation contributes to stable prices because the hatchery owner cannot cut prices far before he is unable to cover his out-of-pocket costs. Under this condition he loses less money by ceasing operation altogether. However, variable costs occupy the same role in hatcheries in Del-Mar-Va with their unstable prices as those in California with their stable prices.

A stable price policy is seen by hatcherymen as contributing to a reduction of risk by promoting more producers to order their chicks in advance. Most hatcheries prefer to set eggs only for chicks for which they have an order on hand. If they maintain a reputation for charging stable prices, they avoid the situation of giving a price advantage to the producer who waits until the last minute to pick up distress chicks. Cutting prices to some producers greatly undermines the hatchery's program of reducing risks and stabilizing output.

The egg cost of a broiler chick, as the largest single item of variable cost, contributes greatly to the profit or loss earned by the hatchery.

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24/ Christian, W. E. Jr. and M. S. Dickerson, Jr. Commercial Chick Hatcheries as a Potential Market for Mississippi Eggs. Mississippi Agricultural Experiment Station Bulletin 492, p. 22, June 1952. See also: Commercial Hatchery Operations in Six Southern States. Southern Cooperative Series Bulletin 34. Alabama Agricultural Experiment Station, Auburn, p.29, July 1953.

variable costs--those in direct ratio to the amount produced. The most important variable cost is the egg cost of the chick. Other variable costs are supplies, unskilled labor, water and electricity, and delivery charges. Fixed costs--those which must be met whether the hatchery operates or not--include depreciation charges on the capital investment, office expense, [illegible], [illegible], etc.

Studies in other areas have shown that variable costs make up about 85 per cent of the total cost of hatchery operation.[1] Although no detailed cost records were obtained for this study, many of the cooperating hatcheries confirmed this ratio of variable to total costs for their business.

The relation between a high proportion of variable costs and stability of prices or output is not clear. It can be argued that this situation contributes to stable prices because the hatchery owner cannot cut prices for before he is unable to cover his out-of-pocket costs. Under this condition he loses less money by ceasing operation altogether. However, variable costs occupy the same role in hatcheries in Del-Mar-Va with their unstable prices as those in California with their stable prices.

A stable price policy is seen by hatcherymen as contributing to a reduction of risk by promoting more producers to order their chicks on advance. Most hatcherymen prefer to sell eggs only for chicks for which they have an order on hand. If they maintain a reputation for charging stable prices, they avoid the situation of giving a price advantage to the producer who waits until the last minute to pick-up distress chicks. Quoting prices to some producers privately undermines the hatchery's program of reducing risks and stabilizing output.

The egg cost of a broiler chick, as the largest single item of variable cost, contributes greatly to the profit or loss earned by the hatchery.

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[1] Christian, W. E. Jr. and M. S. Dickerson, Jr. Commercial Chick

With fairly stable prices, more profit is earned as egg cost goes down. Studies have shown the close relation of the egg cost per chick to the total cost of hatching chicks.[25/] Steps designed to increase the fertility and the hatchability of hatching eggs have a favorable influence on returns. Reductions in risk borne by the hatchery and reductions in original cost of hatching eggs also tend to increase returns.

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25/ Warren, E. L. and M. T. Wermel. An Economic Survey of the Baby Chick Hatchery Industry. U.S. Department of Agriculture. Agricultural Adjustment Administration. p. 46, May 1935.

SUMMARY

The commercial broiler industry has experienced a phenomenal growth in recent years. Production in California in 1952 was over 1300 per cent greater than the average for the years 1935-39. Increasing concentration and commercialization of the industry and the need for a uniform high quality product have made commercial hatcheries a vital factor in this growth. In recent years the industry has been troubled by erratic fluctuations in prices which were primarily caused by short-run changes in supply. The objective of this study was to analyze the price and production policies of the major broiler hatcheries in the state to achieve a better understanding of their influence on fluctuations in output of the commercial broiler industry.

The data for the study were obtained from the 60 largest broiler chick hatcheries in California during the period July 1, 1951 to June 30, 1952. The data were obtained through personal interviews by the authors with each hatchery manager or owner. This study is part of a larger project which will include analyses of the role of hatcheries, financing agencies, processors, and broiler producers on broiler output fluctuations. The overall project is being conducted by the Western Regional Poultry Marketing Committee, WM-7.

Broiler chick hatcheries in California are more closely associated with production of hatching eggs than with other related businesses such as production or processing of broilers. One quarter of the broiler hatcheries surveyed obtained all their hatching eggs from their own flocks.

The hatcheries varied in size from an output of 25,000 broiler chicks to over 6 million chicks during the year for which records were obtained. The size distribution of the hatcheries shows that a high proportion of the total output in the state was concentrated among relatively few operators. In 1951-52 the five largest hatcheries produced 33 per cent of total state output, and half the hatcheries produced over 84 per cent of the total.

The study showed that California broiler chick hatcheries had on an aggregate basis considerable excess productive capacity in the fall and a moderate amount in the spring. This variation was caused principally by the seasonality of demand for chicks--both broilers and flock replacements.

The commercial broiler industry has experienced a phenomenal growth in [illegible]

greater than the average for the years 1929-32. Increasing concentration and commercialization of the industry and the need for a uniform high quality product have made commercial hatcheries a vital factor in this growth. In recent years the industry has been troubled by erratic fluctuations in prices which were primarily caused by short-run changes in supply. The objective of this study was to analyze the price and production policies of the broiler hatcheries in the state to obtain a better understanding of their influence on fluctuations in output of the commercial broiler [illegible].

The data for this study were obtained from the 60 largest broiler chick hatcheries in California during the period July 1, 1931 to June 30, 1932. The data were obtained through personal interviews by the authors with each hatchery manager or owner. This study is part of a larger project which will include analyses of the role of hatcheries, financing agencies, processors, and broiler producers on broiler output fluctuations. The overall project is being conducted by the Western Regional Poultry Marketing Committee, WM-7.

Broiler chick hatcheries in California are more closely associated with production of hatching eggs than with other related businesses such as production or preparing of broilers. One quarter of the broiler hatcheries surveyed obtained all their hatching eggs from their own flocks.

The hatcheries varied in size from an output of 25,000 broiler chicks to over 5 million chicks during the year for which records were obtained. The size distribution of the hatcheries shows that a high proportion of the total output in the state was concentrated among relatively few operators. In 1931-32 the five largest hatcheries produced 33 per cent of total state output, and half the hatcheries produced over 8% per cent of the total.

The study showed that California broiler chick hatcheries had an appreciable basis considerable excess productive capacity in the fall and a readjustment in the spring. This variation was caused primarily by the seasonality of demand for chicks--both broilers and flock replacements.

Many hatcherymen reduced the risk of having "surplus" chicks (at going prices) by setting only enough eggs to produce chicks for which they had standing orders. In order to accommodate those producers who decided to buy chicks without an advance order, some hatcheries set sufficient eggs to cover both early and late orders. The proportion of eggs set which represented advance orders for chicks was to some degree a measure of the risk assumed by a hatchery. When hatcheries set only on advance orders, they shifted most if not all the risk of broiler price fluctuations over to producers. The overset policy of hatcheries was not related to fluctuations in output during 1951-52.

During the year of the study California broiler chick hatcheries were rather successful in predicting and adjusting to changes in the outlook for broilers as reflected in producer's demand for chicks. Hatcheries were able to dispose of nearly all the chicks they produced. Practically none were reported destroyed for lack of a market during the year. Only a few thousand were raised with equipment owned by the hatcheries--most of them during the spring quarter. A few thousand were sold at special reduced prices. These had a negligible effect on the over-all market.

In general, the price policy of the broiler chick hatcheries was one of maintaining relatively stable prices for chicks during the year and adjusting output to the amount which could be sold at those prices. The inelastic demand for broiler chicks promoted this type of price maintenance. The major channel which competition followed was in quality of product (breeding, vigor, growth rate, color, etc.) and services of the hatchery rather than in the price of chicks. In many industries emphasis on non-price competition leads to unstable output because changes in demand must be reflected in output. It was shown, however, that changing broiler chick prices were associated with changes in broiler chick output in the Del-Mar-Va area, but stable prices are associated with more stable output in California.

An important aspect of price policy was the credit policy of the hatcheries. About 13 per cent of the broiler chicks hatched were sold direct to producers on credit with the hatchery carrying the mortgage. Another 15 to 20 per cent of the broiler chicks were sold on credit by joint financing of the hatchery and a feed company with the hatchery carrying a second mortgage. Another 35 per cent of total output was sold for cash to feed

companies and other financing agencies who in turn sold on credit to producers. This illustrates the importance of these agencies as distributors of broiler chicks and promoters of broiler chick sales.

The egg buying practices of broiler chick hatcheries were also related to output policy. The three major methods of payment for hatching eggs were: straight price per dozen throughout the year, no cash price paid for eggs from the hatchery's own flock, and a fixed premium over the quotation for market eggs. The egg cost of a chick was about 65 per cent of the total cost. Therefore, the differences in prices paid for eggs under these systems were in sharp contrast to the stability of chick prices during the year. After allowing for variations in hatchability in the different seasons, the egg cost represented from 58 to 65 per cent of the price of chicks for the hatcheries paying a fixed price. The same percentage varied from 50 to 71 per cent for the hatcheries paying on the fixed margin basis. This contrast suggests that during the year of the study costs of hatching in the different seasons were not closely related to prices charged. No attempt was made to determine whether or not prices equal the cost of production over the long run.

Hatcheries incur an unnecessary risk when buying eggs on the basis of market egg prices. This system of buying makes earnings of a hatchery more erratic because earnings are reduced when market egg prices are at a high level and earnings are excessive when egg prices are low. The risk occurs because the high earnings in one period may not counterbalance the low earnings of another period. This system creates another risk--that of low earnings to the hatching egg flock owner. He is less able to withstand a period of low market egg prices than is the hatchery operator and is unable to increase or decrease production as rapidly as the market egg producer. Low market egg prices can create the danger of shortages of hatching eggs because of producers leaving the business. Difficulties in using the fixed margin system would provide a strong incentive for hatcheries to develop and maintain their own hatching egg flocks.

The price of market eggs is not a good measure of the value of hatching eggs, primarily because the supply-demand forces for each are not the same. On the supply side, the greater efficiency of the light breeds for producing eggs as compared to the meat-bird breeds puts them in a separate class.

eggs as compared to the most-sold breeds puts them in a superior class.

In addition, the difficulty and cost of getting into the production of hatching eggs is much greater than that for market eggs. On the demand side the value of market eggs is related to consumer income, seasonal and temperature changes, and the supply of competing proteins. An alternative system would take into account the factors related to the supply and demand for hatching eggs themselves.

In general, it was shown that broiler chick hatcheries in California could potentially exert an influence on changes in the number of broilers produced:

a. through their influence on the number of hatching eggs available;

b. through their credit and other activities designed to promote more production of broilers;

c. through their oversetting and undersetting practices.

The first two of these factors have their principal influence on long-run changes in output; the last affects short-run changes principally. Except for these factors, hatcheries acted in the capacity of suppliers of chicks in accordance with the orders of their customers.

During the year of this study, California broiler chick hatcheries appeared to be a neutral influence on short-run changes in output in that there was little evidence that they made significant production decisions. They were mostly order takers. They made some final production decisions in order to utilize their excess production capacity, to take advantage of changes in their customers' minds, and to avoid surpluses. The chicks hatched as a result of these decisions represented a small proportion of their total output.

changes in their customers' minds, and to avoid surpluses. The chicks hatched as a result of these decisions represented a small proportion of

Appendix Table 28 —

Number of Broilers Produced and Relative Changes in Production, Selected Areas, 1934-1952

Year	Total 7 Areas[a/]	Calif.	U.S.	Total 7 Areas	Calif.	U.S.
	(Millions)			(Aver. 1935-39 = 100)		
1934	16.6	1.0	34.0	40.6	27.5	49.1
35	22.3	1.8	42.9	54.5	49.5	61.9
36	29.2	2.5	53.2	71.4	68.7	76.8
37	39.9	3.8	67.9	97.6	104.4	98.0
38	50.3	4.6	82.4	123.0	126.4	118.9
39	62.8	5.5	100.1	153.5	151.1	144.4
1940	92.5	6.0	142.8	226.1	164.8	206.1
41	129.5	7.0	191.5	316.6	192.3	276.3
42	155.0	8.2	228.2	379.0	225.3	329.3
43	191.7	11.5	285.3	468.7	315.9	411.7
44	183.2	9.5	265.0	447.9	261.0	382.4
1945	236.6	27.6	356.6	578.5	758.2	527.6
46	186.5	17.9	292.5	456.0	491.8	422.0
47	199.1	20.8	310.2	487.0	571.4	447.6
48	229.1	21.8	370.5	560.1	598.9	534.6
49	316.5	28.6	513.3	773.8	785.7	740.7
1950	378.2	32.6	603.8	924.7	895.6	871.3
51	462.1	47.6	805.6	1129.8	1307.7	1162.5
52	501.4	48.1	886.0	1225.9	1321.4	1278.5
53	528.7	53.3	965.7	1292.6	1464.3	1393.5

a/ Del-Mar-Va, Connecticut, West Virginia, North Carolina, Georgia, Arkansas, Texas.

Sources: Agricultural Statistics 1952, table 588, p. 519, Bureau of Agricultural Economics, United States Department of Agriculture.

Farm Production, Disposition, Cash Receipts, & Gross Income, Chickens & Eggs, by Years. Bureau of Agricultural Economics, United States Department of Agriculture.

California Annual Poultry Hatchery Report, Summary for 1949 and 1952. California Crop & Livestock Reporting Service, Sacramento.

Number of Broilers Produced and Relative Changes

Appendix Table 29

Frequency of Hatching in Major Broiler Chick Hatcheries in California, by Size of Hatchery, by Quarters, July 1, 1951 to June 30, 1952

Annual Average Broiler Chicks Hatched Per Week (000)	July - September							October - December							January - March							April - June							Annual						
	Number of Hatches per Week																																	
	0	1	2	3	4	5	6	0	1	2	3	4	5	6	0	1	2	3	4	5	6	0	1	2	3	4	5	6	0	1	2	3	4	5	6
	(Number of hatcheries)																																	
0 - 4.9	1	12	1					1	11	2						10	3				1		10	3				1	2	43	9				2
5 - 7.9		6	1						6	1						3	4						3	4						18	10				
8 - 14.9		13	5						13	5						5	10	1	1		1		4	11	1	1		1		35	31	2	2		2
15 - 29.9		1	5						1	5							4		1		1			4		1		1		2	18		2		2
30 - 49.9		2	5	2	1				2	5	3					1	4	1	3	1			1	4	1	3	1			6	18	7	7	2	
Over 50			2		2		1			2		2		1			1		3		1			1		3		1			6		10		4
Total	1	34	19	2	3		1	1	33	20	3	2		1		19	26	2	8	1	4		18	27	2	8	1	4	2	104	92	9	21	2	10

Appendix Table 30

Total Incubator Capacity and Its Utilization by Major Broiler Chick Hatcheries in California, by Quarters, July 1, 1951 to June 30, 1952

	July - Sept	Oct - Dec	Jan - Mar	Apr - June
Incubator capacity (000)	12305	12305	12305	12305
Hatchability (%)	69	71	76	78
Maximum potential output (000)				
Per 3-week period	8490	8736	9352	9598
Per week	2830	2912	3117	3199
Total chicks hatched (000)				
Per week	1107	1135	2326	2267
Maximum output (%)	39	39	75	71
Broiler chicks hatched (000)	922	933	1603	1601
Maximum output (%)	33	32	51	50

Appendix Table 30

[illegible] Hydroberics Inc.California. by Just Here.
July 1, 1951 to June 30, 1952

Incubator capacity (000)	1230S	1230S	1230S	1230S
[illegible]	[illegible]	11	14	10
Maximum 3 hatches out at (000)				
For 3-week period	6490	8746	9382	9808
Per week	2230	2912	3117	3139
Total chicks hatched (000)				
For week	1107	1135	2356	2805
Maximum output (%)	39	39	75	74
Broilers chicks hatched (000)	922	933	1803	1000
Maximum output (%)	33	34	57	50

Appendix Table 31

Number of Hatcheries Whose Weekly Output of Broiler Chicks Per Quarter Was a Selected Percent of Average Weekly Output Per Annum, by Number of Years Owner Has Operated at Present Location, July 1, 1951 - June 30, 1952

Years in Present Location	Quarterly Output Per Week as a Percent of Annual Output Per Week																											
	0%				1 - 50%				51 - 75%				76 - 100%				101 - 125%				126 - 150%				151 - 200%			
	Quarters																											
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
	(Number of hatcheries)																											
1 - 5						1			2	2		1	8	9	5	4	3	1	8	7	1	1	1	2				
6 - 10		1							2	3		1	4	4	3	2	1	1	4	3	2		2	1				2
11 - 15					1	2			1	1		1	3	2	1	1	1	1	3	3			1				1	1
16 - 20					2	2			5	6			4	3	2	2			2	1			6	6			1	2
21 - 25									1	1			1	1	1	1							1	1				
26 - 30									2	1			5	5	3	3	1	2	3	2			2	3				
31 - 35	1					1				1			2	1		1	1	1	3	2							1	1
Over 35					2	2			2	2			2	1	1	1			1	2		1	3	2			1	1
All Hatcheries	1	1	0	0	5	8	0	0	15	17	0	3	29	26	16	15	7	6	24	20	3	2	16	15	0	0	4	7

Appendix Table 32

Average Number of Hatcheries Whose Weekly Output of Broiler Chicks per Quarter was a Selected Percent of Average Weekly Output per Annum, by Size of Hatchery, July 1, 1951 to June 30, 1952

Annual Average Broiler Chicks Hatched Per Week (000)	Quarterly Output per Week as a Percent of Annual Output per Week																							
	0%				1 - 50%				51 - 75%				76 - 100%				101 - 125%				126 - 150%				151 - 200%			
	Quarters																							
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
	(Number of hatcheries)																							
0 - 4.9	1	1				2			2	3		1	7	5	4	4	4	3	7	6			2	1			1	2
5 - 7.9									3	4			2	3	3	2			1	1	2		3	4				
8 - 14.9					3	4			6	8		1	8	5	4	3	1	1	5	4			7	7			2	3
15 - 29.9									1			1	3	3	2	2	1	1	4	3	1	2						
30 - 49.9					2	2			1	1			6	6	3	3	1	1	4	4			2	1			1	2
Over 50									2	1			3	4		1			3	2			2	2				
All Hatcheries	1	1	0	0	5	8	0	0	15	17	0	3	29	26	16	15	7	6	24	20	3	2	16	15	0	0	4	7

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Appendix Table 33

Prices of Broiler Chicks in Major Broiler Chick Hatcheries in California by Breeds, by Quarters, by Percent Sold on Credit, July 1, 1951 to June 30, 1952

Quarters	Percent Sold on Credit														
	0			1 - 24			25 - 49			50 - 99			100		
	Breeds and Strains														
	N. H.	Cornish	Vantress	N. H.	Cornish	Vantress	N. H.	Cornish	Vantress	N. H.	Cornish	Vantress	N. H.	Cornish	Van-tress
	(Weighted Average Price - $ per 100)														
July-Sept	18.3	18.8	19.0	17.9	18.8	-	18.2	19.0	-	18.7	18.9	-	17.5	18.0	-
Oct - Dec	18.3	18.7	17.0	18.1	19.1	-	18.3	19.0	-	18.6	18.7	-	17.5	18.0	-
Jan - Mar	17.9	18.3	19.0	17.6	18.4	-	17.8	18.2	-	17.9	18.0	-	17.5	18.0	-
Apr - June	17.9	18.3	19.0	17.7	18.6	-	17.9	18.2	-	18.2	18.3	-	17.0	18.0	-

Appendix Table 34

Premium Paid for Hatching Eggs by Major Broiler Chick Hatcheries in California by Percent of Chicks Sold to or Financed through Feed Dealers, July 1, 1951 to June 30, 1952

% Sold to or Financed thru Feed Dealers (Annual Average)	Cents "Over" Quoted Price for Grade AA Market Eggs					Straight Price per Dozen (cents)				Raise Own Eggs
	15-24	25-29	30-34	35-40	Over 40	90-94	95-99	100-104	105-109	
0		2	3	7			2	3		9
1 - 25	1		3	2			3			3
26 - 50			5	6				2	1	
51 - 75	1		1	1				1		2
76 -100	1				1	1	1			3
Total	3	2	12	16	1	1	6	6	1	17

Note: Five hatcheries quoted more than one price.

Appendix Table 3b

Premium Paid For Motoring Risks by Motor Surplus Lines Motorists in Cells and by Percent of Premium Paid through Licensed Agents,
July 1, 1951 to June 30, 1952

Appendix Table 35

Premium Paid for Hatching Eggs by Major Broiler Chick Hatcheries in California by Percent of Chicks Sold on Credit, July 1, 1951 to June 30, 1952

% Sold on Credit	Cents "Over" Quoted Price for Grade AA Market Eggs					Straight Price per Dozen (cents)				Raise Own Eggs
	15-24	25-29	30-34	35-40	Over 40	90-94	95-99	100-104	105-109	
0	1	1	8	8	1		1	2	1	9
1 - 25		1	1	3			4	2		3
26 - 50	2		2	5			1	2		3
51 - 75										1
76 - 90			1							
91 -100						1				1
Total	3	2	12	16	1	1	6	6	1	17

Note: Five hatcheries quoted more than one price.

Appendix Table 36

Premium Paid for Hatching Eggs by Major Broiler Chick Hatcheries in California by Percent of Business Sold on Advance Orders, July 1, 1951 to June 30, 1952

% of Business on Advance Orders (Annual Average)	Cents "Over" Quoted Price for Grade AA Market Eggs					Straight Price per Dozen (cents)				Raise Own Eggs
	15-24	25-29	30-34	35-40	Over 40	90-94	95-99	100-104	105-109	
1 - 50		1	1	2				1		2
51 - 75	2	1	5	1			1			2
76 - 90	1		5	4	1		3	1	1	6
91 -100			1	9		1	2	4		7
Total	3	2	12	16	1	1	6	6	1	17

Note: Five hatcheries quoted more than one price.

Appendix Table 36

Premium Paid for Hatching Eggs by Major Broiler Chick Hatcheries in California by Percent of Business Sold on Advance Orders, July 1, 1951 to June 30, 1952

% of Business on Advance Orders (Annual Average)	Cents "Over" Quoted Price for Grade AA Market Eggs					Straight Price per Dozen (cents)				Rates Own Eggs
	25-29	30-34	35-40	Over 40	90-94	95-99	100-104	105-109		
1 - 50		1	1	2				1		2
51 - 75	2	1	5	1			1			2
76 - 90	1		5	4	1		3	1	1	6
91 -100			1	9		1	2	4		7
Total	3	2	12	16	1	1	6	6	1	17

Note: Five hatcheries quoted more than one price.